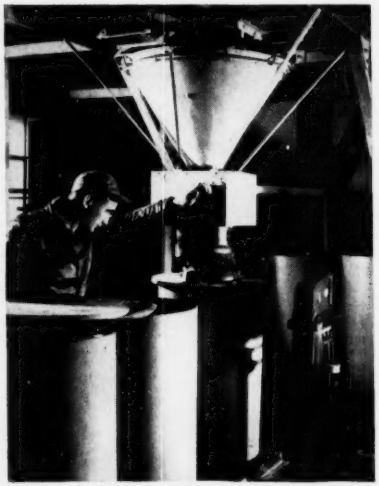
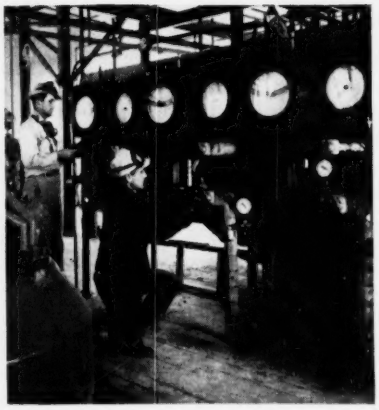
Chemical Industries Week

May 5, 1951

Price 35 cents





Containers: It's catch-as-catch-can as DO's snare lion's share p. 11

Price ceilings hit chemicals; threaten expansion plans . . . p. 14

New woodpulping process under study; key: triethylene glycol p. 23

CIW Camera: Kolker Chemical builds insecticide plant in heart of market . . . . . p. 26

Pentaerythritol; users queue up as defense needs preempt current supplies . . . . . p. 35

A McGRAW-HILL PUBLICATION

From SHELL CHEMICAL

DTBP

(Di-Tertiary-Butyl Peroxide)

$(CH_3)_3C\text{-}O\text{-}O\text{-}C(CH_3)_3$

Stable polymerization catalyst ...at a new lower price

Shell DTBP provides many unique advantages as a catalyst for moderately high-temperature resin polymerization. Now the economy of reduced cost has been added to these qualities:

Stability... DTBP is insensitive to shock...can be stored without composition change or danger of explosion. Its decomposition rate is uniform ...governed entirely by the temperature of operation, independent of kind of monomer, prepolymer, or reaction medium.

Color and Clarity... DTBP leaves no color forming bodies, no acid residue... helps to produce lighter colored polymers... particularly suitable for styrenated alkyds, polystyrene and styrenated oils.

Ease of Handling... no special precautions required... non-corrosive and readily soluble, not only in most resin monomers, but also in viscous partial polymers.

High Catalytic Efficiency... a high degree of conversion from monomer to polymer is obtained with DTBP per unit weight of catalyst.

DTBP is available in commercial quantities, *and is shipped in 1-gallon, 5-gallon and 15-gallon containers.*

PROPERTIES of DTBP

Molecular Wt.	146.22
Spec. Gravity, 20°/4°C.	0.7940
Refractive Index, 20/D.	1.3890
Melting Point, °C.	−40.0
Boiling Point, °C (284 mm.)	80
Flash Point (Tag Open Cup), °F.	65
Solubility in water, 20°C (wt. %)	ca. 0.01

Samples available. Technical literature and a sample of DTBP for your own evaluation will be sent on receipt of your letterhead request.

SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

Eastern Division: 500 Fifth Avenue, New York 18 • Western Division: 100 Bush Street, San Francisco 6
Los Angeles • Houston • St. Louis • Chicago • Cleveland • Boston • Detroit • Newark

Chemical INDUSTRIES Week

May 5, 1951

Volume 68 Number 16

OPINION	2
NEWSLETTER	7
BUSINESS & INDUSTRY	11
RESEARCH	21
PRODUCTION	23
SPECIALTIES	26
PACKAGING	31
MARKETS	33
BOOKS	37
BOOKLETS	40

ABP ABC

PUBLISHER ..... Wallace F. Traendly
EDITORIAL DIRECTOR .... S. D. Kirkpatrick
EDITOR ..... W. Alec Jordan
EXECUTIVE EDITOR .. Richard L. Demmerle
MANAGING EDITOR . Howard C. E. Johnson

ASSOCIATE EDITORS: John J. Craig, Herman W. Zabel. ASSISTANT EDITORS: Joseph Gordon, Ralph R. Schulz. REGIONAL EDITORS: Frank C. Byrnes, Chicago; J. V. Hightower, San Francisco; James A. Lee, Houston. ART EDITOR: Woodfin G. Mizell, Jr. EDITORIAL ASSISTANTS: Claire Baker, Donald P. Burke, Leona Mahler, DOMESTIC AND FOREIGN NEWS SERVICE: McGraw-Hill News Bureaus in principal cities of the U.S. and throughout the world.

Consulting Editors:

Lawrence W. Bass	Ernest W. Reid
Benjamin T. Brooks	Norman A. Shepard
John V. N. Dorr	Roland P. Soule
Charles R. Downs	Robert L. Taylor

Chemical Industries Week (including Chemical Specialties) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. Publication Office: 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 18, N.Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Industries Week are solicited in the chemical and process industries only from management men responsible for corporate affairs, purchasing, sales, marketing, packaging, research or chemical functions. Position and company connection must be indicated on subscription order. Address all subscription communications to J. E. Blackburn, Jr., Director of Circulation. Allow ten days for change of address.

Single copies 35¢. Subscription rates — United States and Possessions $5.00 a year; $8.00 for two years; $10.00 for three years. Canada $6.00 a year; $10.00 for two years; $12.00 for three years. Pan American countries $7.00 a year; $11.00 for two years; $14.00 for three years. All other countries $20.00 a year; $30.00 for two years; $40.00 for three years. Entered as second class matter April 5, 1951, at the Post Office at Philadelphia 23, Pa., under the Act of March 3, 1879. Printed in U.S.A. Copyright 1951 by McGraw-Hill Publishing Co., Inc. — All Rights Reserved.

NEWARK "End-Shāk" TESTING SIEVE SHAKER

Motion is important in making sizing tests. Conforms to recommendations for the motion to be used when making hand tests, issued by the Bureau of Standards.

Here, in the Newark "End-Shāk" unit, you get proper sustained hand motion mechanically. You get the best motion without being subjected to any human variation or weakness. This sturdy testing machine holds up to 7 full height sieves or up to 13 half height sieves. It is designed for 8 inch diameter sieves. Standard ⅓ HP., 110-220 volt 60 cycle, 1750 rpm motor supplied. Special motor to order.

We'll be glad to send you prices and descriptive literature. And if you will outline your testing requirements we'll be glad to suggest the proper sieve series to use.

NEWARK for ACCURACY

Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

Philadelphia 3, Penna. 1311 Widener Bldg. | San Francisco, Calif. 3100 19th St. | Chicago, Ill. 20 N. Wacker Dr. | New Orleans, La. 520 Maritime Bldg. | Los Angeles, Calif. 1400 So. Alameda St. | Houston, Texas P. O. Box 1970

Chemicals that persuade... convince... cajole...

The time and hour call for chemicals with compelling personalities... chemicals with dynamic qualities that IMPROVE YOUR PRODUCTS...that make them **look better, smell better, taste better.**

Dodge & Olcott has such chemicals and continues, as it has for the past 152 years, to develop new techniques, new materials, and excitingly new fragrances that answer the need and desire of American industry... that will evoke **popular demand** for your products. Consult D & O.

D&O

DODGE & OLCOTT, INC.

180 Varick Street • New York 14, N. Y.

ESSENTIAL OILS • AROMATIC CHEMICALS
PERFUME BASES • VANILLA • FLAVOR BASES

OPINION . . . . .

Not Always Inevitable

To The Editors . . . I have just read your article "More Xylenes Loom", (March 29). While this article may paint a rather rosier picture than the demonstrable facts will support at this time, I feel that on the whole it is an excellent and accurate presentation.

While xylenes can be made simultaneously with benzene by use of processes such as those to which you refer, it is by no means true that xylenes are automatically or inevitably produced along with the benzene. In fact, it is quite possible to design an efficient benzene producing plant which will produce substantially no xylenes.

My impression is that at least some of the benzene plants which are currently being designed will not produce xylenes. Thus the question is not only whether to separate the xylenes but whether to produce them in the first place.

So far as we know, this company is the only present commercial supplier of para xylene. Our experience would indicate that some of your cost estimates are optimistic.

Geo. L. Parkhurst
Chairman of the Board
Oronite Chemical Company
San Francisco, Cal.

To Reader (and top xylene-from-petroleum authority) Parkhurst, CIW's thanks for further delineating the xylene-benzene picture.—Ed.

Much to be Learned

To The Editor: We have just read the antibiotic discussion ("Wonder Drugs Snag New Laurels") in your April 7th issue. . . .

Antibiotic feed supplements have most certainly assumed a place of importance in manufactured feeds . . . and in a very short period of time. We were glad to note that your article, among other things, does refer to the fact that the results produced by the antibiotic supplement depend in large measure upon the ration to which the supplement is added.

Feeding livestock animals efficiently is a team work job, so-called, in terms of the nutrients in the ration. It is quite evident that additional probing now is in order because the use of antibiotics will prompt a realignment of the overall nutrient balance in the ration.

Only in this way can we hope to get the best possible use out of the feed. In other words, it is likely that previously unrecognized and even unexisting limitations of rations will come to light. As soon as such weak points are detected they will call for further readjustments of nutrient balance . . . and in this way additional improvements will be made in the productive qualities of the feed. . . .

Much also needs to be learned regarding the how and the why as applied to the use of these antibiotics in modern livestock rations.

H. Ernest Bechtel
Director of Research
General Mills, Inc.
Detroit, Mich.

Antibiotics Up To Date

To The Editor: Your article "Wonder Drugs Snag New Laurels" (Apr. 7) has just come to my desk and I should like to make the following comments. . .

The statement was made that "Very often APF produced a growth stimulation over and above that which could be attributed to B_{12}." This statement applies only to aureomycin APF.

There were two other APF supplements which were produced from antibiotic fermentations prior to 1950. Both of these were prepared from the streptomycin fermentation.

Neither supplement contained any antibiotic. APF concentrates from the penicillin and bacitracin fermentations were not marketed prior to 1950 because these fermentations do not produce vitamin B_{12}. Terramycin was still in the experimental stage.

The finding that the "second" growth factor in the aureomycin APF was aureomycin was made at Lederle Laboratories and was announced by us in March, 1950.

Bacitracin is effective for chickens and turkeys, but recent tests at Iowa State College have shown it to be completely ineffective for pigs. The major outlet for antibiotics as feed supplement is for pigs. . .

The article quoted results of recent tests at Storrs Agricultural Experiment Station of the University of Connecticut's College of Agriculture. Only 80 chickens were used in each treatment. From our experience in this type of work. . . we conclude that the differences would not be repeatable, except that streptomycin is consistently slightly lower than the other four.

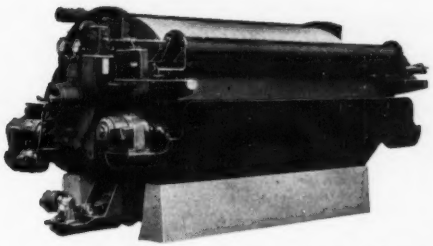
The article does not mention the importance of the prevention of diarrhea which is associated with slow growth. The anti-diarrhea effect has been consistently noted only for

OLIVER

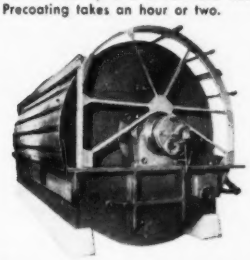
Each the Nemesis of Pulps Forming Thin, Sticky, Flow-Retarding Cakes

Precoat FILTER

Panel FILTER



• The Oliver Precoat Filter operates in continuous cycles with a pre-formed 'precoat' of suitable porous material such as diatomaceous earth. Solids form a thin film on the surface of this precoat which is shaved off by a traveling knife edge as the drum rotates, leaving continually a fresh surface of precoat for cake deposition. Actual filtration continuous for periods ranging from 8 hours to several weeks before the precoat is used up and a new one has to be formed. Precoating takes an hour or two.



• The Oliver Panel Filter in contrast to the Precoat Filter doesn't use a precoat. Nor is there any wire winding to hold the cloth on the drum. An ingenious discharge mechanism picks the thin cake off the cloth leaving it clean and ready for further cake deposition. The cloth is in a relatively small piece and is held in place by caulking into recesses between sections.

WHY two distinctly different filters for handling pulp forming one class of filter cake? Another question answers that one: "What do you want to do with the cake? Keep it or throw it away?"

The Precoat Filter makes use of a pre-formed layer or 'precoat' of filter aid which, as it is removed with the cake, mixes with it. Usually such cakes are discarded, although it is often possible to separate the solids from the precoat by a suitable solvent.

The Panel Filter does not use a precoat or pre-formed layer of filter aids. Thus it discharges the solids uncontaminated in any way. It, too, handles easily those thin, sticky, flow-retarding cakes. It is usually recommended when the cake is valuable or is to be processed further. We call these two filters to your attention in case you wish to obtain the advantages of continuous and automatic filtration of a pulp that for one reason or another produces an extremely thin cake.

New York 18 — 33 W. 42nd St. Chicago 1 — 221 N. LaSalle St.
Oakland 1 — 2900 Glascock St. San Francisco 11 — 260 Calif. St.
Export Sales Office — New York • Cable — OLIUNIFILT

FACTORIES:
Hazleton, Pa.
Oakland, Calif.

OLIVER UNITED FILTERS inc.

WORLD WIDE SALES, SERVICE AND MANUFACTURING FACILITIES

CANADA
E. Long, Ltd.
Orillia, Ontario

MEXICO & CENT. AMERICA
Oliver United Filters Inc.
Oakland, Calif.

EUROPE & NORTH AFRICA
Dorr-Oliver S. A. Brussels
Dorr-Oliver S.N.a.R.L. Paris
Dorr g.m.b.h. Wiesbaden (16)
Dorr-Oliver Co., Ltd., London, S.W. 1
Dorr-Oliver S.a.R.L. Milano
Dorr-Oliver, N.V. Amsterdam-C

PHILIPPINE ISLANDS
E. J. Nell Co.
Manila

HAWAIIAN ISLANDS
Honolulu
A. R. Duvall

WEST INDIES
Wm. A. Powe — Havana

SOUTH AMERICA & ASIA
The Dorr Co., New York

AUSTRALIA
Hobart Duff Pty., Ltd.
Melbourne

SOUTH AFRICA
E. L. Bateman
Johannesburg, Transvaal

to manufacturers of

HEAVY CHEMICALS

Seeking complete, compact, efficient chemical plants for

Sulphuric Acid	Phosphoric Acid	Hydrochloric Acid
Nitric Acid (all types)	Sulphur Filtering	Ammonia Oxidation Units
Sulphur Dioxide	Formaldehyde	
Fertilizer Plants (All types)	Ammonium Sulphate Plants	Sulphuric Nitric and Phosphoric Acid Concentrators
Acid Proof Masonry Designs and Materials	Sulphide Ore Roasting	Acid Sludge Recovery

The Nicolay Titlestad Corporation offers

The finest services for the design and construction of heavy chemical plants. Our experience includes plants and processes listed above and our facilities are available to you for consultation and contracting on any chemical engineering problem anywhere in the world.

Before you build, expand or modernize your equipment, in any of the fields listed above, write for details concerning our services and recommendations. We supply the right answers *quickly!* No obligation . . .

530

NICOLAY TITLESTAD CORPORATION

11 WEST 42nd STREET
NEW YORK 18, N. Y.

aureomycin. This is one of the reasons that we decided on aureomycin rather than penicillin or bacitracin at Lederle.

Dairy calves, as well as poultry and swine, have been shown to be benefited by aureomycin.

T. H. MARSHALL
Manager of Manufacturing
Lederle Laboratories Division
Pearl River, N. Y.

Our thanks to Reader Marshall for his valued extension of CIW's report. —ED.

No Silicone Spalling

TO THE EDITOR: Among your letters to the editor, March 24th issue, is one from a Mr. J. Hayes Low, describing his difficulties with silicone-containing car polish. According to Mr. Low, a repaint job on his own silicone-polished car spalled off. It was only after he took his car to a larger shop that he learned silicone polish was difficult to remove—and that it had to be removed completely before repainting. . .

Mr. Low feels that "manufacturers should make sure that everybody who should know about silicones is properly informed as to their characteristics". . . We agree with him. We're not a polish manufacturer, but as the original source of silicones, the initiator of silicone-containing polishes, and the major supplier of silicones used for that purpose . . . we have tried to determine and to disseminate all the facts connected with these materials.

Our first bulletin on removing silicone polish preparatory to repainting was released over a year ago. The tremendous interest in silicone polishes last summer prompted us to rewrite this information in greater detail and to distribute it as widely as possible. . .

In case you feel that some of your other readers would like to be "properly informed" about the silicones, we have copies available of our application data sheets. . .

Incidentally, we read "DeCetex 104" article in your February 10th issue with great interest.

Although perhaps a bit misleading in implication (no dry cleaner has the facilities to cure DeCetex evenly at 300 F., even for only five minutes), it was, on the whole, well handled.

J. H. O'NEILL
Dow Corning Corp.
Midland, Mich.

CIW thanks Reader O'Neill for outlining the missionary work Dow Corning has done. Among the points the comprehensive bulletin covers are two important departures from standard practices observed by competent refinishers (1) Disposable solvent-soaked cloths should be used to avoid picking up and transferring the residual silicone film. (2) The surface must be cleaned before grinding to prevent grinding the silicone film into the metal surface.—ED.

Bleach Battle

TO THE EDITOR: Your recent article entitled, "Powdered Bleach Battle" (April 14) was excellent, and we appreciate the fair coverage given these new and booming products. . .

While you mentioned in a footnote that V. I. P. Powdered Bleach contained calcium hypochlorite, I feel that many readers will get the impression that V. I. P. Powdered Bleach is one of the "safety" bleaches, which utilize sodium perborate as the active ingredient.

V. I. P. *is not* after the fine fabric market, but was formulated to compete with liquid bleach. . . As your article pointed out, liquid bleach has a number of advantages over these "oxygen bleaches" as a cleaner and disinfectant. Also, liquid bleach cannot be beat when it comes to bleaching cotton fabrics. It is the most economical and most effective bleaching agent for cottons.

V. I. P. Powdered Bleach can be used for every purpose that liquid bleach can be used for. It does as good a job for cottons (the primary bleach use) as liquid bleach, and is equally effective as a cleaner and a disinfectant.

You might be interested to know that a majority of the commercial laundries in this country use calcium hypochlorite as their bleaching agent.

G. R. FRECHIE
Sales Director
Gordon Chemical Company
Philadelphia, Pa.

For a clear exposition of V. I. P.'s properties and marketing goal, CIW's thanks. In discussing both sodium perborate and calcium hypochlorite in the same article we didn't differentiate between them nearly as well as does Reader Freschie. But both are battling sodium hypochlorite. The odds: that they will capture a third of the present liquid bleach market. —ED.

CIW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: The Editor, Chemical Industries Week, 330 W. 42nd St., New York City.

GLYCERINE

IMPORTANT FOR NATIONAL HYGIENE...

...IMPERATIVE FOR NATIONAL DEFENSE!

Shampoos and shaving creams . . . toothpastes, toiletries, lotions . . . our day-to-day health depends heavily on aids like these. And they, in turn, depend on U.S.P. Glycerine!

Glycerine is an all-important solvent, plasticizer, oil repellent, humectant and freezing-point depressant, with a combination of physical and chemical properties unmatched by any other product!

That's one reason why it ranks high in importance to our defense efforts—so high that it was named one of the first six chemicals to be put under inventory control*!

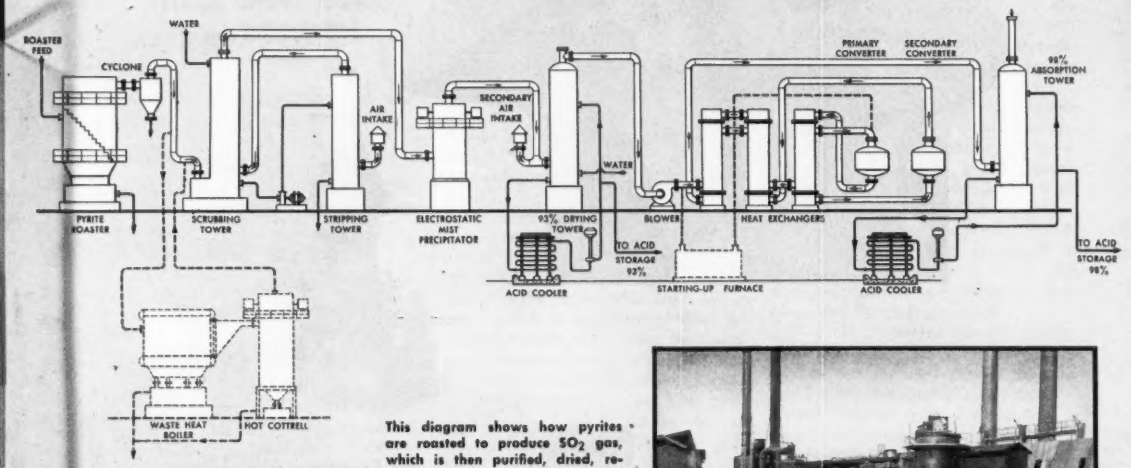
Propellants and explosives, as well as life-saving pharmaceuticals, are numbered among Glycerine's other applications. So, if your supply is temporarily restricted in the days to come, remember: Military demands must be met!

*By Government authorities responsible for inventory control under the National Defense Act.

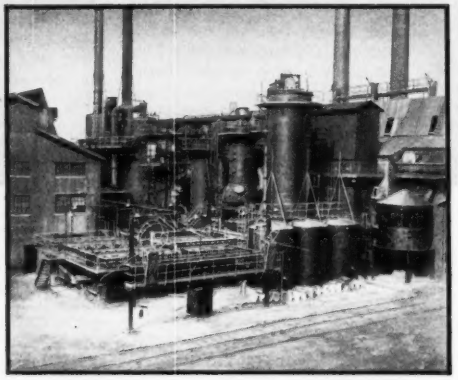
GLYCERINE PRODUCERS' ASSOCIATION
295 Madison Ave., New York 17, N. Y.

Another practical solution to the sulfur shortage

Make Sulfuric Acid from PYRITES



This diagram shows how pyrites are roasted to produce SO_2 gas, which is then purified, dried, reheated and converted into H_2SO_4 of any desired strength.



HERE'S a practical answer to the sulfur shortage. With the Chemico acid process diagramed above, vitally needed sulfuric acid can be manufactured from ores such as pyrite, pyrrhotite and other metal sulfides which are in plentiful supply. The Chemico acid process can be adapted to use the sulfur dioxide gas from any preferred standard type of roaster.

Our wide experience in the design and construction of acid-making facilities enables us to deliver efficient plants on a performance-guaranteed basis.

For additional information on this Chemico process write for Bulletin S-102

CHEMICAL CONSTRUCTION CORPORATION

A UNIT OF AMERICAN CYANAMID COMPANY

488 MADISON AVENUE, NEW YORK 22, N. Y.

EUROPEAN TECHNICAL REPRESENTATIVE: CYANAMID PRODUCTS, LTD., LONDON W. C. 2, ENGLAND

CABLES: CHEMICONST, NEW YORK

Chemico plants are profitable investments

CC-215

Chemical Industries Week

BUSINESS MAGAZINE OF THE CHEMICAL PROCESS INDUSTRIES

NEWSLETTER

Technical advances this week include a new intermediate, a resin, and progress in normally static "black powder" chemistry.

The intermediate is isophthalic acid, which Oronite Chemical Co. is making on a larger-than-laboratory scale by oxidation of meta xylene. The firm is now distributing a limited supply as samples. Major market foreseen if and when it is commercialized: alkyd formulations.

The resin is Rohm & Haas's Uformite 700, a cationic wet-strength resin for all types of paper pulp. Advantages claimed: no aging or acid treatment required, stable on storage, no special equipment needed.

Unexcelled Chemical Co. (New York), formerly a big factor in fireworks, is readying a new jet assist for airplane take-offs—hopes to capture a big share of the $20 million annual peacetime market.

Present jet assists are precision-machined, and thus too expensive to jettison; operate over a limited temperature range −10 to +90 F); are sensitive to shock. Unexcelled's new product costs a third as much, doesn't require critical materials, is stable, can be jettisoned and thus reduce drag, operates over a wider temperature range (down to −50 F), and delivers up to twice the usual thrust of 1,000 lbs. for 12 seconds.

Unexcelled will make them on its 650-acre site at Cranbury, N.J.

Nowadays each week brings ingenious stratagems to beat commodity shortages. Three months ago (CIW Newsletter, Feb. 17) Gates Brothers, triple superphosphate maker at Wendell, Idaho, had shut down for lack of acid. The plant is now operating on spent acid from two Salt Lake City petroleum refineries, Utah Oil Refining Co. and Salt Lake Refining Co.

Dow Chemical is going as far afield as Seattle to get benzene for its Gardena, Calif., styrene plant. Dow will take Seattle Gas Co.'s entire production—about 1.5 million gallons a year. For the present it will be shipped by tankcar, but Dow will spend $50,000 on a pipe from the gasworks to the waterfront and a 10,000-bbl. steel storage tank. The crude benzene will then be shipped by tanker.

One potential shortage—hydrogen and sodium cyanides—will be averted by the simple device of more capacity. Synthetic fibers based on acrylonitrile and adiponitrile are calling for increasing amounts of cyanides, as are acrylic esters. Capacity (in terms of hydrogen cyanide) was 56 million lbs. at year's start. By year's end it will be close to 100 million lbs., and by early 1953 it will be pushing 200 million.

In Washington this week the Justice Department is talking about severing Ansco Division from General Aniline & Film Corp. and selling it separately. Sale of General Aniline is held up—and may be for years—by litigation; but Attorney General McGrath thinks that Ansco could be sold separately. He also hinted at a recapitalization plan for GAF.

Also in Washington, the NPA and the Department of Agriculture divvied up their control over foods that have industrial uses—egg products, fats and oils, sugar, molasses, etc. USDA will have jurisdiction until they are incorporated into manufactured products, such as pharmaceuticals, paints, adhesives, etc. Then NPA takes over.

Synthetic ammonia is due for close scrutiny by the inorganic chemicals division of NPA. Situation is that at least five companies have applied for tax relief, in the form of certificates of necessity, on new synthetic ammonia capacity.

But two of the applications are for capacity already built and operating. Three others—for a total capacity of 700 tons a day—are for units planned or under construction by Lion Oil (Texas), Spencer Chemical and Mississippi Chemical (Mississippi).

Before OK'ing any of the applications, NPA is going to make a survey, establishing need of new capacity before granting tax relief.

Swelling demand for basic chemicals has already outdated Diamond Alkali's January expansion plans. At that time the company decided to spend $2.3 million to up chlorine output of its Houston plant.

Now sights have been raised to a $5.5 million total outlay, boosting chlorine capacity to 400 tons a day.

Diamond is thinking even farther ahead, may decide to use up the balance of its $11.5 million authorization from NPA, which would double the plant's current capacity.

More on manpower: Not only is a crippling shortage of engineers in industry forseen (CIW Newsletter, April 21), but the Engineering Manpower Commission of the Engineers Joint Council claims that engineers grabbed off by the military services—which presumably need engineers too—are being wasted by assignment to jobs where their technical talents are unused. The claim recalls similar contentions made during World War II.

The EMC is collecting data on such cases, has written to Secretary of Defense Marshall urging steps to see that engineers are used in their professional capacity. "There appears to be," says the letter, "no established means . . . to avoid the call of engineers to service to fill non-engineering assignments. This may in the end have a serious effect upon defense production."

On the technical front, a new fiber and a new hydrogen peroxide process are indicated by recent patents.

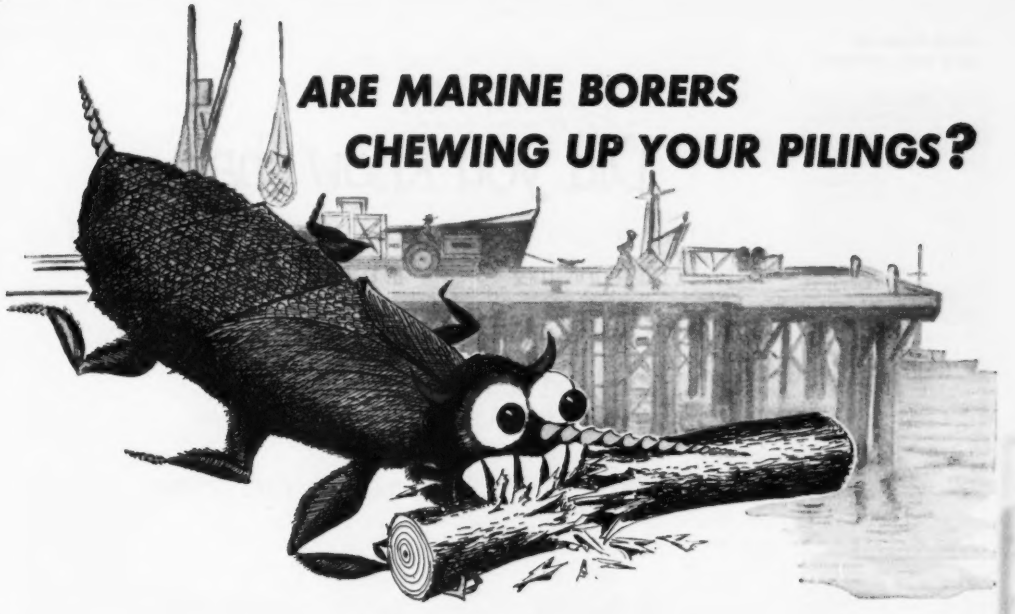
Partial oxidation of hydrocarbons—propane and butanes—yields hydrogen peroxide rather than aldehydes if the temperature is high enough. Patent No. 2,533,581, assigned to Du Pont, describes use of a 4:1 volume ratio of hydrocarbon to oxygen at temperatures from 370 to 490 C, depending on which hydrocarbon is used.

A fiber composed of acrylonitrile and allyl or methallyl cyanide is suggested by a patent (No. 2,529,911) on the copolymer, assigned to Eastman Kodak Co. Proportion of the allyl compound ranges from 2% to 40%.

Frenchtown Porcelain Co. (Frenchtown, N. J.) is now actively researching markets for its ceramic body, #4462, which is mainly fused alumina containing a significant percentage of manganese. Its high resistance to heat, thermal shock, corrosion, abrasion and wear suggest possible use in jet and rocket engine parts, piping and parts subject to corrosion, and other heavy-duty ceramic applications.

Stanford Research Institute is doing the research job.

. . . The Editors



ARE MARINE BORERS CHEWING UP YOUR PILINGS?

Starve them with steel—plus NATIONAL graphite ground anodes!

TRADE-MARK

WHY GRAPHITE ANODES ARE BEST FOR CATHODIC PROTECTION:

- **Complete and sure protection in sea water—indefinitely**
- **Positive control in any weather; just change a tap on the rectifier to raise or lower current input**
- **Perfect for use in high resistance soils**
- **Longest life of any anode material obtainable**
- **Thoroughly tested and proved in service for more than 20 years**

If your dock facilities are subject to attack by marine borers, install borer-proof steel pilings, and protect those pilings from underwater corrosion by economical long-lasting "National" graphite ground anodes.

The anodes are lowered to the bottom and connected with a shore-based rectifier. Another wire from the rectifier runs to the steel pilings. When current is passed, it flows out from the pilings into the water—thus giving very complete cathodic protection. No matter how severe the corrosive conditions are, you can regulate the current to afford the proper protection, simply by adjusting the rectifier.

Other advantages of steel pilings are: more strength ... better fire resistance ... less maintenance ... lower insurance rates.

"National" graphite ground anodes also provide the most practical and economical cathodic protection for *buried pipe lines, tank farms, oil well casings, water mains, underground cables, ship hulls* and dozens of other products buried in earth or submerged in water.

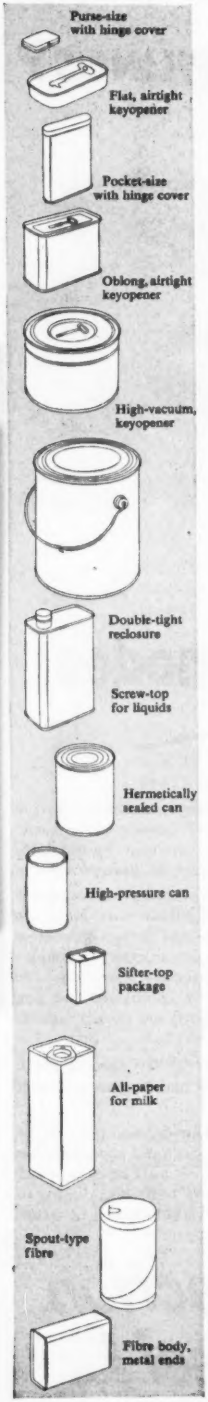
Cathodic protection saves steel!

The term "National" is a registered trade-mark of

NATIONAL CARBON COMPANY
a Division of
Union Carbide and Carbon Corporation
30 East 42nd St., New York 17, N. Y.

District Sales Offices:
Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco
In Canada: National Carbon Limited, Toronto 6

WHICH PACKAGE SUITS YOUR PRODUCT?



Did you know that...

This container is used for Pancake Syrup

And also for Salad Oil

Not to mention Anti-Freeze

In addition to Insecticides

It is also perfect for Auto and Furniture Polish

While it makes the ideal package for Liquid Wax

And these are just a few of the many, many products which may be ideally packaged in this container!

And did you know that for each product special seam compounds were developed by our research staff?

Now, did you know that this is just one of *hundreds* of containers pioneered and developed by Canco for many different businesses in many different fields?

It is this 50-year experience in pioneering and developing which makes Canco the most versatile manufacturer in the industry.

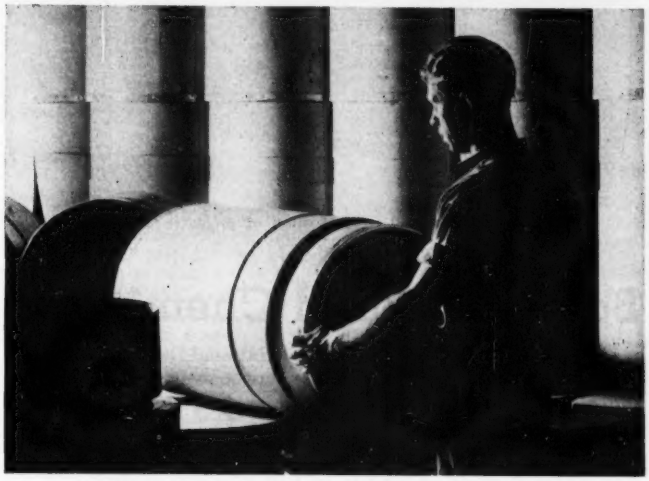
Today, in these critical times, Canco's accumulated knowledge and resourcefulness will help its customers meet the unusual problems brought about by the national emergency.

CANCO *Containers—to help people live better*

AMERICAN CAN COMPANY

NEW YORK • CHICAGO • SAN FRANCISCO • HAMILTON, CANADA

BUSINESS & INDUSTRY



CONTAINERS: Weak link in the chain of increased production.

Package Pinch Hurts

Scarcity of steel causes scarcity of drums and cans; demands for other containers and packaging components outreach supply. Capacity production falls short of mounting orders.

New capacities will ease shortage, but not before the end of year. Meanwhile industry wonders who gets available supply.

NPA says essential needs will be met. Outlook is for military and defense production to get enough, a scramble for the rest.

Acutely aware of the general shortage of containers, harried chemical men this week ponder a knotty problem: How to ship increased production without a corresponding increase in the supply of containers. On the other hand, container producers are deluged with orders in the face of raw material shortages reminiscent of World War II. A good barometer of the size of the shortage is a recent report by the Department of Commerce. Commerce says that even in the last quarter of 1950, demands far outreached supply, although at that time defense requirements were comparatively light.

Steel for Containers: The shortage of steel containers is particularly painful to the chemical companies since, along with the petroleum industry, they account for 80% of all consumption. NPA reports there has been a decline in production and that in 1950, manufacturers were able to get only 75% of their needs. Presently, orders are backlogged 6 months.

NPA's Ray Norris (acting chief, Metal Containers Section of the Containers Division) claims that the container industry could use 6 million tons of steel in 1951, if it were available. Additional steel capacity (roughly 10% by the end of this year and 20% by the end of next year) should go a long way toward alleviating the shortage. But "it takes steel to make steel" and new facilities will reduce the immediate supply by approximately 1%.

Tin can makers, big steel users, are feeling not only the pinch on that material, but also the government policy for conserving tin. In 1950 tin can prices went up from 12 to 15%; demands 30%. As a result NPA issued Order M-25 which, as amended last month, sets up quotas and establishes A and B preference schedules for delivery. Most chemical companies are reduced to 90% of their base period (1949 or 1950) use and placed on the B schedule, unless the product has a DO rating.

Glass Containers: As the metal shortage spurs a swing to glass, a seller's market is reported for glass container producers. However, the industry entered 1951 with a substantial cushion of unused capacity, as pointed out by Victor Hall,* of the Glass Manufacturers Institute. In 1950 production was at a sub-par 106 million gross. Early production figures for 1951 indicate the industry is turning out containers at an annual rate of 117 million gross. Furthermore, peak capacity will not be hit until late spring or early summer so that '51 production will probably be well above that figure. In general the outlook by manufacturers is that for the remainder of the year they will be able to meet demands on a reasonable basis.

Paper and Paperboard: NPA reports that production of folding and set-up boxes is at a 4-year high but that demand is up 25% over 1950. A backlog of orders has resulted in a 6 to 8 week delay in delivery. The situation with regard to paper bags and containers is about the same: Capacity production, 50% rise in demands and delays in delivery of 90 days or more.

Other Materials: In fact the same picture is true for almost every type of container and packaging component. Demand for wooden boxes has soared 80% but lumber, nails, and steel strapping are hard to come by.

*Occasion: AMA Packaging Conference, Atlantic City.

Fibre cans and tubes makers say there is no inventory on hand, but DO's are mounting. Plastic film container fabricators are hard pressed to meet heavy defense orders despite production increases as high as 147%.

Outlook: In a transition period such as we are now in, shortages of all types are to be expected. Long range prospects point to the easing of the scarcity as new capacities are brought in all along the line. But for the presen, the outlook is not too bright.

That poses the question: Who will get the present available supply. NPA says that "essential" needs will be met.

For other customers, the picture is not so clear. The best bet is that companies will get what they need to supply the military and defense requirements—after that it will be a case of catch-as-catch-can.

Sachse Gets Nod

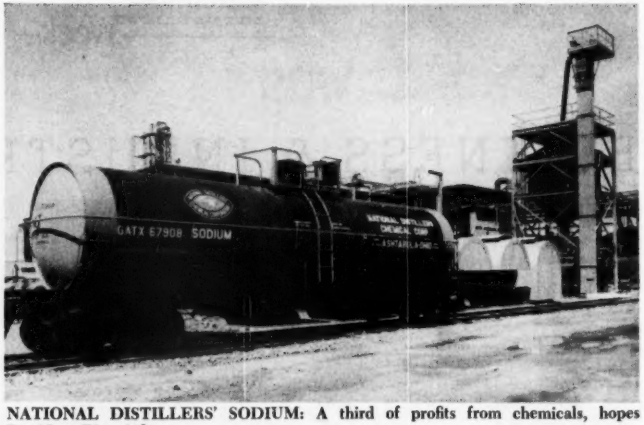
This week Carbide & Carbon Chemicals Co. assessed its process for production of acetylene by the partial oxidation of natural gas with "tonnage oxygen"—the Sachse process. The result was good—so good that the firm is planning a large expansion of the small semi-commercial plant which has been operating at Texas City, Texas, for over a year (CI, June, 1949, p. 905).

The Texas City plant is the first commercial installation (Monsanto is building a similar plant, also at Texas City) for producing natural gas acetylene and represents the culmination of 37 years' work by Carbide.

Since 1914: Carbide's research on production of acetylene from natural gas is the direct outgrowth of a fellowship established at Mellon Institute in 1914. Shortly after its establishment, work turned to the production of chemicals from olefins, also produced by natural gas cracking.

Acetylene was not forgotten, however, and a semi-commercial acetylene chemicals plant was established by Carbide & Carbon in 1924 at Niagara Falls, N.Y. In 1925 this became the Niacet Chemicals Corp. and Carbide & Carbon returned to the production of chemicals from olefins.

Initial experimental work on the partial oxidation process, used at Texas City, was started in 1945 and progressed through the usual cycle of small-scale experiments to the unit completed last year. Installation of the still larger unit is now only a question of obtaining from the government the necessary priorities and certificates of necessity.



NATIONAL DISTILLERS' SODIUM: A third of profits from chemicals, hopes President Bierwirth.

Bottled-in-Bond Chemicals

Within a period of five years National Distillers Products Corp. will have fashioned a major new power in the chemical industry, both by amalgamation with existing companies and by construction of totally new plants.

The anticipated $75 million annual sales will come from National's chemical activities in resins, ethyl alcohol and its derivatives, chlorine, metallic sodium, sodium peroxide, and soda ash.

Next week National Distillers Chemical Corp. hopes to begin production of sodium peroxide at its new Ashtabula, Ohio, plant. Next month, stockholders of National Distillers Products Corp., the chemical company's parent, and of alcohol and resin-making U.S. Industrial Chemicals, Inc., are expected to approve the merger of the two companies.

Late next year production should begin at a new soda ash purification unit to be operated by a company owned jointly by National Distillers and Food Machinery & Chemical Corp. And shortly thereafter National Distillers Chemical Corp. is expected to increase its production of chlorine and metallic sodium by 50% at Ashtabula, Ohio, where it has been operating a metallic sodium plant since the summer of 1950.

New Power: This burst of activity adds up to the creation of a new power in the chemical industry—one which will provide earnings on about $75 million in gross sales (on top of the $27 earned by National in 1950 on other products). National's gross sales were $399 million in 1950.

Thus the hope voiced several years ago by National's president J. E. Bierwirth, that one-third of National's profits would eventually come from chemicals, appears well on its way to realization.

Basis: National Distillers' earnings, held down through the War years, rocketed from $11.8 million in 1945 to $40 million in 1946 and they have leveled off at the $25 million-a-year bracket ever since. A conservative dividend policy built up earned surplus from $33 million in 1944 to $117 million in 1950, providing a firm capital base on which to build. And that is just what National is doing.

Reentry: National Distillers is no stranger to the chemical industry: Its corporate predecessor, Distillers Securities Corp., acquired controlling stock in USI when it was formed in 1906. This was sold in 1915 for $2.5 million. Later it acquired several industrial alcohol plants, two of which it sold in 1929: Kentucky Alcohol Co., Westwego, La., to USI; a 50% stock interest in Eastern Alcohol Co. to Du Pont.

In 1933 National teamed up with USI, forming Penn-Maryland Corp. to produce blended whiskies; and in

1934, USI sold its 50% stock interest to National. In January of this year National purchased for cash 122,907 shares (25% of the total) of USI common from Air Reduction Co., and a merger between the two companies has been proposed. To be voted on June 5 of this year, the plan calls for two shares of National Distillers common to be exchanged for each share of USI common.

Sodium First: National's sodium operations started in 1946 when Du Pont retained E. B. Badger & Sons Co. to find somebody with $10 million to invest in the construction and operation of a new plant for the simultaneous production of chlorine and elemental sodium. Although there was a second producer in 1946—Ethyl Corp.—Du Pont had a direct financial interest in it. Half of Ethyl is owned by General Motors, 23% of whose common stock is owned by Du Pont.

National had the needed capital and a Du Pont-designed and engineered plant was erected for National at Ashtabula. Present capacity is 18,000 tons of metallic sodium per year, and it is expected that this will be increased by 50% in the near future. Chlorine from this plant is piped to Hooker-Detrex, Inc.'s adjacent plant for production of trichloroethylene. Total investment in the two plants, if the proposed 50% expansion is carried through, will be somewhat under $20 million.

Soda Ash: Production of soda ash is National's latest venture. Some time ago Westvaco, before it was purchased by Food Machinery, began sinking a shaft to a bed of trona under the plains of Wyoming near Green River. This was completed some time ago, but the soda ash when used for glass-making, gave an off-colored product. After much investigation Westvaco decided to erect a purification plant at Westvaco, Wyo. The new unit when it is completed, probably towards the latter part of 1952, will have a production capacity of 300,000 tons per year of purified ash.

This operation has been separated from Food Machinery's other activities and will be carried on by a new subsidiary to be set up for this purpose. National Distillers will obtain, for $2 million, a 20% stock interest in this as-yet-unnamed subsidiary (*CIW, April 7, 1951*).

Consolidation: These moves may or may not represent the extent of National's interest in the chemical industry. In any event, a period of comparative quiet is likely to ensue while the gains that have been made are consolidated.

NAVAL PLASTICS LAB: Some military materials get civilian jobs.

Navy Probes Plastics

The U. S. Navy isn't interested in plastics as "substitutes;" for even though many strategic metals are scarce, the military services have first call. Rather, specific properties of various plastics dictate their use in many applications, and Naval Ordnance Laboratory's new plastics research center is busy ferreting out, comparing, and recommending synthetic materials for naval use.

The Plastics Laboratory is among the most recent to become a part of the NOL set-up at White Oak, Md., a Washington, D. C. suburb. It is carrying on the work begun at the old Silver Spring Plastic Laboratory, which during the last war was directly under the Chief of the Bureau of Ordnance. When the Bureau's research facilities were centralized, the Silver Spring unit was moved to NOL.

$40 Million Set-up: NOL is one of the most modern and best-equipped research and development establishments in the world. Moreover, it is supplemented by five field stations.

Construction of the White Oak labs began in 1944 and was substantially completed in 1949. It includes more than 60 permanent buildings located on a 938-acre tract. Property, plant and structures are worth over $20 million; equipment, another $20 million.

The plastic research is done in Building 71, first designed as a warehouse. Here plastic materials are molded, fabricated and finished. Laboratory facilities for plastic experiments are provided in the main laboratory and administration building. Chemical, biological and design experiments are carried out in the main building. Additional testing can be carried out in the newest NOL laboratory, the Environmental Test Building, which can simulate high and low temperature, humidity and pressure.

All Kinds of Jobs: Building 71—the Plastic Lab—is equipped with a complete assortment of machinery to make articles from plastics, ranging from tiny items to pieces as large as 20 feet in length. It can perform various types of industrial fabrication such as compression, injection and transfer molding, blow-molding, sheet forming and allied techniques.

The seven sections or "shops" reveal the extent of the lab's operations. They are the die making shop (makes intricate tools for die-making and molds), low-pressure plastics section (resins and reinforced plastics), pulp-resin section, high-pressure section (where most of plastics parts are made) design and measurement section, resins section, and adhesives and coatings section.

Although aimed at the military sphere, some of NOL plastic work has found civilian uses. The plastic spray used by the Navy to "can" or preserve shipboard installations, which was developed at the plastics lab, is one of these. The U. S. Department of Agriculture has been experimenting with the spray and has issued a number of reports commending it for use as a temporary sealing sheath to

Price Lid Balks Expansion

New general price edict (CPR 22) has chemical industry in uproar as huge bookkeeping job looms for many companies.

CIW survey of chemical managements reveals price base period ill-chosen, expansion plans will be hurt.

Some relief may come in form of alternative pricing method now being considered by government officials.

PRICE BOSS DiSALLE barks out order, starts squawks.

"Boon to bookkeepers." This was the most charitable and printable comment chemical managements could make about Ceiling Price Regulation 22 which royally floored them this week. And as the initial shock of the edict wore off, the area of criticism enlarged to include the whole workings of the Office of Price Stabilization and the mental machinery of the man who heads it . . . Michael V. DiSalle.

Reactions—Plenty: To get an across the board reaction to the new price regulation, Chemical Industries Week queried chemical executives throughout the nation. The major complaints in order of frequency were: (1) Too much bookkeeping (2) Too general an order for a specific industry to live by (3) Too complicated (4) Harmful to expansion plans (5) Bad base period chosen (6) Harmful to research and development progress.

West: Specific reactions were hot and heavy. Said Everett Griffin, president Griffin Chemical Co. . . . "how are you going to control under one order a segment of industry as diversified as chemicals? The order seems unreal in many respects." In the same city and the same day, R. A. LaMoree, sales manager of Stauffer Chemical Company said "there are not enough accountants in the country to understand the order and do the work called for."

Midwest: E. W. Wilson, vice president and general manager of Armour's auxiliary companies said: "there are many questions to be answered. We can't say how the order will affect us because of the connection of our chemical business with Armour and Company's other business. Should we consider it separately from curled hair, glue, sandpaper, etc. . . . or with them?"

William Block of Blockson Chemical Company raised the interesting point of "who starts first—if we revise prices before our raw material suppliers do, what happens?"

East: In keeping with eastern conservatism, most executives would permit themselves to be quoted. But a few chose some rather caustic words to describe their feelings on the matter. One comment: "DiSalle ought to have his head examined . . . why can't he be sensible once in a while?" Another comment: "this new edict smacks of pure unadulterated socialism . . . it penalizes research efforts and just about negates expansion."

There's no doubt that the name of the bustling price boss will be cussed out many times within the next four weeks. For from now until May 28th, when the price rollback edict goes into effect, hundreds of chemical companies will have to refigure the prices of many tens of thousands of products. That will take a lot of overtime arithmetic and ironically, under the new regulation, extra overhead and overtime are not to be figured in for price increases. Noble aims: According to the prefects of prices, CPR 22 has three main purposes: (1) roll back of margins widened after Korea, (2) restoration of normal (what's normal) cost-price relationships, and (3) granting of needed relief to manufacturers from the general freeze order.

Inclusive: According to the official wording CPR 22 applies to "sales by all manufacturers in the continental United States, including exporters, except sales at retail and sales of commodities specifically exempted. Manufacturers with last fiscal year gross sales under $250,000 have the option of using CPR 22 or remaining under the GCPR (General Ceiling Price Regulation of January 26, 1951)."

Exemptions: After CPR 22 came out there was notably easier breathing among some segments of the chemical industry . . . those who are specifically exempted—usually because they are already covered by other OPS regulations. Among the fortunate are manufacturers of crude and synthetic rubber, synthetic textiles, drugs and cosmetics, many fermentation products and producers of naval stores and most fats and oils (see table).

Principles: The main principle behind the twenty second commandment of price regulation is the return to pre-Korean prices adjusted for increases in manufacturing costs between Korea (June 27, 1950) and December 31, 1950 (on some items, March 15, 1951). The base year is July/49 to June/50. OPS argues that if the margin in the base year was sufficient, then the formula used in the new regulation should be sound for present production. But increases are limited to manufacturing costs (labor and materials) actually required

Exempt from CPR 22 are manufacturers of the following products:

Coke, Coal Chemicals, Coke Oven Gas
Crude and Synthetic Rubber
Synthetic Textile Fibers and Yarns
Drugs and Cosmetics
Household Soaps and Cleansers
Ethyl and Butyl Alcohol, Acetone
Paints and Varnishes
Naval Stores
Most Fats and Oils, Including Whale and Fish Oil
Natural Dyeing Materials
Inedible Tallows and Greases
Oil seeds and Nuts Retaining Their Identity in Normal Trade Practice
Other Chemical Items Like Glycerin, Soap Stock, Glue Stock, Oleo Stock, Gums and Waxes.

for production. Overhead, sales, research and advertising costs connot be brought into the price computations.

Two Big Rubs: It is significant that right in these basic principles are the reasons for the two biggest complaints (a mild word) that the chemical industry hurls at the new pricing pronouncement: (1) it picked a dull, unrepresentative base year and (2) it completely ignores the cost of research . . . a necessity, not a luxury, of the chemical industry.

In Operation: Essentially, CPR 22 deals with methods of re-pricing commodities delivered or offered between July 19, 1949 and June 24, 1950. In figuring these new ceilings a chemical manufacturer must start with his base period price and make adjustments for increases in factory labor and material costs. If he has made no increases, he may retain his base prices without calculating adjustments.

Labor Adjustment: Under the regulation, a manufacturer can compute labor cost adjustments either for the entire business or for a unit of the business for which he regularly maintains separate records. If the computation is made for the entire business the regulation provides for a single labor cost adjustment percentage to be applied to the base period price of every commodity manufactured during that time.

Similar calculations on labor cost increases are allowed on units of a business for which separate records are maintained. If this is done the manufacturer uses sales and factory payroll figures for the unit concerned and applies the labor cost increases uniformly to the base period prices of all commodities produced in that unit of the business.

Material Cost Adjustment: There are four, and none of them particularly simple, methods for calculating the material cost adjustment factor. All require a lot of head scratching but the so-called "aggregate" method is probably the kindest to pencil points. In a general sense it subtracts a summation of materials decreases from increases (costs) to determine the total material increases. It then divided this hard won answer by sales to get the desired "materials cost adjustment factor." The multiplication of the base period price by this "factor" is said to result in the proper new price. To repeat, this "aggregate" method is the simple approach to the problem.

Hardship: There is a provision in the new price edict for appeal, based on hardship. Such appeals may be made to OPS by manufacturers only if ceilings result in operating losses. Action, officials promise, will be forthcoming within 30 days from the date of the appeal.

Reports: By May 28, every chemical manufacturer whose products are not exempt or not separately covered by a special OPS order must file a report on OPS Public Form #8. The information requested by the form covers: (1) product covered by report (2) dates of base period chosen (3) estimated 1950 sales in dollars (4) labor cost adjustment factor for the product line (5) materials cost adjustment factor, and (6) the proposed price. Then the manufacturer must wait 15 days after registered mail has delivered his form before he can begin selling at the new figures.

Relief in Sight: OPS officials admit they expect trouble, claim they are considering many supplementary regulations to ease the situation. The most important of these will give manufacturers an alternative pricing method to CPR 22, under which they can adjust ceilings to the general free order of January 26 rather than to base prices as required in the order. The hope: that this may relieve the plight of multi-product companies such as those who make up the chemical industry.

Many VIP's in the chemical industry were still too dazed, puzzled, or maddened to choose words with which to express their views. Many more are waiting for interpretations now in the making by lawyers and other experts in the art of unstringing red tape. But there's no doubt that CPR 22, a wordy document, born in a labor of words, will live in a life of words . . . and all of them won't be nice.

Helping Hand For Inventors

"A man and an idea are no longer enough to move our technological machine. . . . We must bring facilities, money and the man together . . . so that no good idea dies aborning for lack of opportunity." Thus did P. C. Spencer, president of Sinclair Oil Corp., propound last week the basic philosophy of the "Sinclair Plan."

Sinclair's multi-million dollar research-facilities at Harvey, Ill., have just been incorporated as Sinclair Research Laboratories, Inc., a wholly-owned subsidiary of Sinclair Oil Corp. Under the Sinclair Plan these facilities have been thrown open "to any American with an idea for new or better petroleum product or application."

These ideas will be sought out with the aid of advertising, publicity, and any other possible means. Mutual interest dictates that they should be protected by a patent or patent application before submission. A screening will indicate those showing most promise.

Selected ideas will be tested by Sinclair's facilities to prove commercial or scientific value. A simple contract between the inventor and Sinclair will grant Sinclair royalty-free use of the invention in return for their investment of money, time, facilities and personnel. This contract will not impair the inventor's opportunity to sell his idea or make other arrangements elsewhere outside of his agreement with Sinclair.

Spencer pointed out that in the early days, an amateur scientist or mechanic could invent, test, and market his brainchild from an attic, basement, or garage workshop. But pyramiding inventions have advanced our technology so rapidly and complexly that a new idea can rarely be put through its paces without the help of a small army of specialists, costly test equipment, and years of effort. Thus the need is obvious for industry, with money and facilities, to team up with the men who have the ideas. This open-door policy should result in even more rapid development of new products for the mutual benefit of the inventor and industry.

P. C. SPENCER: An attic's not enough.

be used when fumigating tobacco and other farm crops.

Top Secret: Details of experiments dealing with many types of plastics for naval ordnance uses cannot be revealed; but engineers, using laminated plastics and "plastic type" materials, are solving many of the Navy's long-standing problems.

Tell, Sell Government

To sell to the government, businessmen should tell government purchasing officials what their companies make and sell. This was the basic message of a pamphlet issued this week by the U. S. Chamber of Commerce's Department of Manufacture. Copies of the booklet were distributed during the early part of the week at the Chamber's annual meeting in Washington.

The pamphlet, which should have much meaning to chemical manufacturers, especially those who deal in specialty items, was prepared by Emil K. Gubin, Washington administrative lawyer who has become a one man procurement information center (*CIW, Apr. 7*).

Six Steps: Gubin's gospel, which is entitled "Six Steps in Selling to the Armed Forces," gives direct advice on government buying procedures and methods of selling to the military. Throughout the work, the author hammers constantly on the advisability of businessmen preparing brochures that explain their companies' product line, resources, equipment and general ability to handle government business.

Neat, Not Gaudy: The brochure needn't be an expensive printed job, says the expert. A neat and simple typewritten or mimeographed presentation is good enough. The brochure when left on the desk of a buying official provides a constant reminder of what a given company makes or can make. And it's very important, the booklet claims, to give a picture not only of what the company now makes but also what its physical set-up might enable it to make . . . if a need arises.

Gubin claims that the same principles that prove successful in ordinary commercial activities should be followed in selling to the government. Procurement officials are no different, basically, than purchasing officials in commercial life. "When you can't sell another businessman on the first try, you don't go over his head to your congressman of the customer's home office. You go back and sell until you get results."

USCC Warning

A warning that some of the things done in Washington as "emergency" undertakings may change our system of government if they are permitted to remain was sounded last week by the U. S. Chamber of Commerce. The Chamber was dealing primarily with organized labor's efforts to have a direct hand in running the mobilization agencies. But the warning has general significance because "emergency" controls like "emergency" taxes tend to become permanent.

The Chamber stated that the demands organized labor is making upon the President and his mobilization administrators must be recognized for what they really are: proposals calculated to produce basic and permanent changes not only in labor relations but also in the administrative phases of government. The mobilization crisis is just the excuse, even though the United Labor Policy Committee continues to cry emergency as the reason for the demands.

The Chamber sees two issues: The first: If organized labor representatives are put on important mobilization agencies of the government, and function as such, then a minority group has a direct hand in the government. And the second is that if the Wage Stabilization Board is turned into a labor court handling all kinds of labor questions, not wages alone, then a special kind of compulsory arbitration will result.

"If the demands are met and if the crisis lasts a decade or more, as well it might, the changes would become basic and permanent," the Chamber says.

Harmony Restored

Better patent protection for chemical inventors is provided in a recent decision of the Court of Customs and Patent Appeals. Overruling itself, the Court has held that a chemical patent may have a "Markush" type claim under a true generic claim.

"Markush" type claims are peculiar to chemical patents. Such claims are neither for a broad class of compounds nor for a specific compound. In 1924 an inventor named Markush tried to get a claim using the generic term, "monoamine," and was told that it was too broad. He then shifted the claim to define a number of monoamines by name. Example: ". . . material selected from the group consisting of aniline, homologs of aniline, and halogen substitutes of aniline." Since that time, Markush claims have flourished to confuse inventor, patent attorney, patent examiner and court alike.

In 1946, the Court of Customs and Patent Appeals held that if true generic claims were allowable, any Markush claims in the same application should be rejected. On October 11, 1949, notice appeared which was diametrically opposed to the decision of the Court. The Commissioner of Patents instructed the Examiners that a Markush claim should not be rejected merely because of the presence of a generic claim which included the former in its scope. The recent decision (In Re Greider and Smith, 88 USPQ 384,) again brings the Court and the Patent Office into harmony. Said the Court in its decision, "such instruction, in our opinion, is based upon sound reasoning . . .:

> "This restriction (with respect to Markush type claims, would be logically sound if there were a reasonable certainty that the true genus claim would be held valid by the courts. Conceivably, a patentee may have presented a number of examples which, in the Examiner's opinion, are sufficiently representative to support a generic claim and yet a court may subsequently hold the claim invalid . . . Where this happens the patentee is often limited to species claims which may not provide him with suitable protection."

FOREIGN . . . . .

Pakistan: A new pharmaceutical factory, the Ibna Sine Laboratory, is expected to go into production some time in June. Plant will furnish Pakistan's needs and leave a balance for export to neighboring countries. Present plans call for the inauguration of a three-year expansion program shortly after the plant goes into operation.

•

France: Vital chemicals such as plastics and aviation gasoline will be produced more cheaply in France as a result of an ECA grant to an important chemical plant in the Marseilles region; $825,000 is being invested in the Societa Naphtachimie near Martigues. The Marshall plan funds will be used to buy special machinery in the U.S. and to engage the service of American technicians.

•

Egypt: American experts are now at Aswan preparing specifications for a chemical fertilizer plant. The plant will be one of the first to receive the benefits of the hydro-electric

Always comes clean!

Swan-Finch uses Tri-Sure Closures to keep impurities from its famous Motor Oils, Gear Oils and Hydraulic Oils

Almost a century ago, the Swan-Finch Oil Corporation was founded on a reputation for *quality* and *dependability*. Today that reputation attains its pinnacle in the Swan-Finch Line of Lubricating Oils and Greases.

Motul Motor Oils are noted for their high viscosity index and resistance to oxidation, because they embody selected base stocks . . . painstakingly refined—and additives.

Motul Motor Oils and Safco Industrial Oils are known for their *purity*, their complete freedom from contamination—because every Swan-Finch drum is protected by Tri-Sure Closures*.

Operators of hydraulic equipment, for instance, know that Saf-Drive Hydraulic Oils are *always clean*—will never clog the delicate parts of a pump—because they are delivered in drums that *seal out* all impurities.

Today, Tri-Sure protection is an additional selling feature for any drum delivered product. Utilize it now—to give *your* product security from leakage, contamination and undetected pilferage. When you order drums, just specify "Tri-Sure Closures".

**The "Tri-Sure" Trademark is a mark of reliability backed by 28 years serving industry. It tells your customers that genuine Tri-Sure Flanges (inserted with genuine Tri-Sure dies), Plugs and Seals have been used.*

Tri-Sure
Reg. U. S. Pat. Off.
CLOSURES

AMERICAN FLANGE & MANUFACTURING CO. INC., 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.
TRI-SURE PRODUCTS LIMITED, ST. CATHARINES, ONTARIO, CANADA

TC
TENNESSEE CORPORATION

SULPHUR

Many users of Sulphur are finding that Sulphur Dioxide can be effectively and economically substituted for Sulphur. Many industries have made this conversion and the results have been most satisfactory. Perhaps Sulphur Dioxide can be just as effectively adapted to your operation. At no obligation to you, one of our representatives would be glad to consult with you.

SULPHUR-DIOXIDE
HIGHEST QUALITY
SO_2

Listed below are a few of the industries that are using Sulphur Dioxide to solve many of their production problems today.

- Pulp Paper Industry
- Leather Tanning
- Textile Industry
- Metal Refining
- Petroleum Industry
- Resins & Plastic Manufacturing
- Manufacturers of Artificial Silk
- Water Treatment
- Refrigeration & Air Conditioning
- Preserving Fruits

We would be pleased to have one of our representatives consult with you on your problems. Write, wire or call for further information.

TENNESSEE TC CORPORATION
619 Grant Building, Atlanta, Ga.

power from Aswan dam.

Work by the experts is expected to last for two months. When they have finished their studies, the Minister of Public Works will submit the project for international bids

KEY CHANGES. . .

J. D. Gunther: From secretary to vice president, Air Reduction.

T. Stanley O'Brien: To secretary, Air Reduction.

C. H. Black: From president to chairman of board, American Can Co.

W. C. Stolk: From executive v. p. to president, American Can Co.

William S. Richardson: To vice president, B. F. Goodrich Co.

Edward A. Ravenscroft: To vice president, Abbott Laboratories.

Ernest K. Gladding: From assistant director to director, Du Pont Development Department.

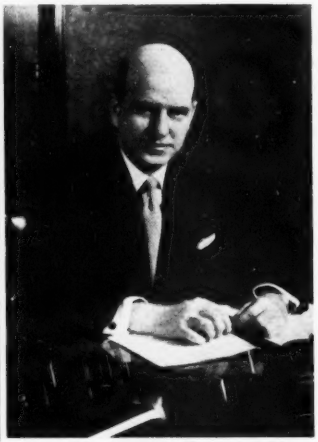
Emile F. Du Pont: To director, Du Pont Service Department.

Edward R. Gay: To executive v. p., St.-Regis Paper Co.

Morse G. Dial: To executive v. p., Union Carbide and Carbon Corp.

George W. Marshall: To vice president, Raybestos-Manhattan, Inc.

Alvin F. Heinsohn: To vice president, Raybestos-Manhattan.



CHARLES A. THOMAS, president of Monsanto, was executive v.p. before he was elected to replace W. N. Rand, who retired.

ERNEST W. REID, now president, Corn Products Refining, was v.p. of the Chemical and Research Division.

EXPANSION . . . .

Alcan: The company now officially confirms the report (*CIW, Apr. 21, 1951*) that it will go ahead with its huge aluminum reduction plant at Kitimat, B. C. Capital expenditure is estimated at $160 million, annual capacity at 175 to 220 million lbs.

Raw material will be received from the Caribbean area or Canada by ship or rail, and power will come from a chain of interior lakes. The water will drop 2,500 ft. through a 10 mi. tunnel beneath the coastal mountains to a powerhouse inside the mountain.

In another expansion move, Alcan is building a power plant at Chute Savanne in Quebec's Saguenay district at an estimated cost of $60 million. The company has started a reduction plant in Quebec to cost $45 million. New capacity there, with the new plant in B. C., will boost primary aluminum production by 330 million lbs.

•

Alcoa: Aluminum Co. of America will immediately start construction of a reduction plant at Wenatchee, Wash. Adequate power will be assured as a result of negotiations with the Bonneville Power Administration and the Public Utility District of Chelan County, Wash. The plant will cost $40 million and will produce 170 million lbs. of aluminum a year.

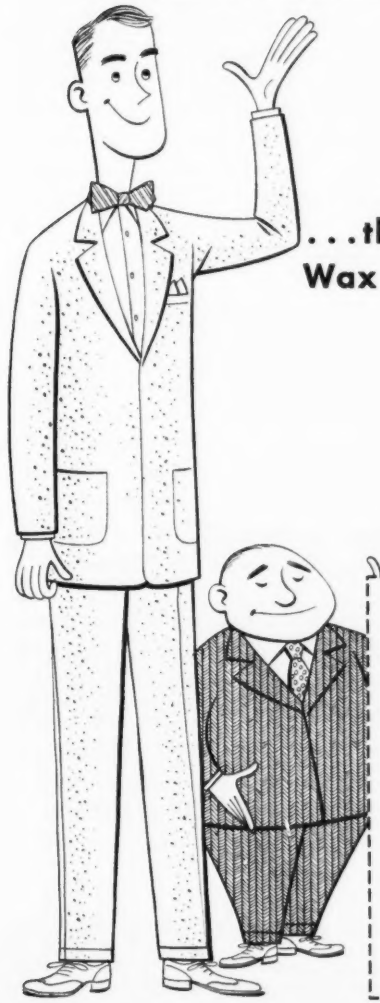
•

Swift and Co.: Expansion of the Bartow, Fla., plant will add 20,000 tons to its annual fertilizer capacity. Work will get under way immediately and be completed some time next fall.

If you use WAX

in any of these products or processes . . .

1 Auto Polishes
2 Bottle Cap Linings
3 Candles
4 Carbon Paper
5 Citrus Fruit Dips
6 Coils and Condensers
7 Crayons
8 Fabric Treating
9 Flax Packings
10 Food Packaging
11 Hard Surface Floor Covering
12 Insulating Materials
13 Leather Belting
14 Leather Finishes and Dressings
15 Leather Packing
16 Lubricant for Ironers and Presses
17 Lubricant for Thread and Cord
18 Matches
19 Mold Lubrication
20 Paper Coatings
21 Paper Impregnating
22 Paper Sizings
23 Phonograph Records
24 Polishes
25 Printing Inks
26 Protective Coatings
27 Rust Preventives
28 Self-Polishing Floor Wax
29 Sizing Materials
30 Soaps
31 Starches
32 Textile Finishes
33 Transformers
34 Water-Wax Emulsions
35 Wire and Cable Insulation



. . . there is a Concord Wax especially suited to your needs

CONCORD #159
CONCORD WAX CWB
CONCORD PARWAX
CONCORD AQUAWAX
CONCORD #190
CONCORD WAX PWB
KARAGAMI WAX
CONCORD MICROCRYSTALLINE WAXES

***. . . mail this coupon to learn the economical and special technical features of* CONCORD WAXES**

CONCORD CHEMICAL COMPANY
Moorestown, New Jersey

Please send me informative technical data and price lists on Concord special waxes designed for the following uses (indicate numerals as listed above or describe more fully): _____

NAME _____

COMPANY _____

ADDRESS _____

☐ *Send me a test sample, too.*

VICTAMIDE (U.S. Pat. 2122122)

Victamide is an ammonium salt of an amide-polyphosphate. It has the following typical analysis:

TYPICAL ANALYSIS

P_2O_5	76.1%
NH_3 (Total)	22.4%
NH_3 (Free)	15.4%
Amide N as NH_3	7.0%

PHYSICAL STATE

Victamide is a white, fluffy, non-crystalline solid. Its particle size is exceedingly fine, practically all being less than 5 microns. The apparent density is only 22 pounds per cubic foot. Victamide has a slightly salty taste and no odor.

SOLUBILITY

Victamide is highly soluble in water (100 grams will dissolve in 100 cc.), going into solution readily in hot water and slowly in cold. A 5% solution has a pH of approximately 5.3. It is slightly soluble in ethylene glycol, but practically insoluble in alcohol, acetic acid, butylacetate, acetone, benzene, toluene, and carbon tetrachloride.

VISCOSITY OF SOLUTIONS

Viscosity increases with concentration up to 25 centipoises at equal parts by weight of Victamide and water. At this concentration the solution has a specific gravity of 1.394.

are you seeking these unique properties?

YOU WILL BENEFIT FROM VICTAMIDE

The unique properties of Victamide offer opportunities for improving your process and increasing the selling advantages of your products. If you would like an experimental sample of Victamide, write today . . . on your company letterhead, please. We shall be glad to work with you.

SEQUESTERING AND WATER SOFTENING

Victamide forms complexes with many metallic ions including calcium, magnesium, copper, aluminum, and iron. Chelation is best accomplished in alkaline solution although this is not essential in every case. A chart showing the amounts of Victamide necessary to soften hard waters is given below. The figures show its effectiveness as a water softener when used with soap.

VICTAMIDE	Hardness of water treated—ppm					
	500	400	300	200	100	50
Room temp. oz. per gal.	.74	.60	.34	.14	.06	.03
140°F oz. per gal.	.44	.28	.20	.12	.06	.02

FLAME RETARDANT PROPERTIES

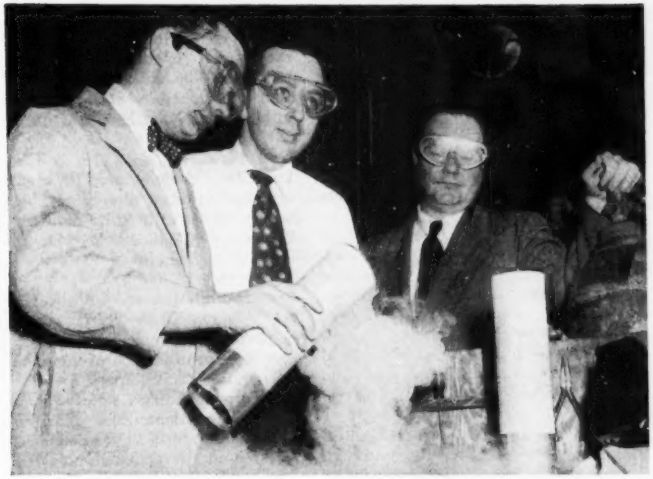
Victamide is an effective fire retardant. It is preferred in applications where an exceptionally high P_2O_5 content, great solubility, and noncrystalline character are important.

DEFLOCCULATION AND DISPERSION

Victamide's deflocculating and dispersing properties are showing promise in improving the fluidity, pumpability, and solids content of suspensions of kaolin clay, calcium carbonate, and other finely divided solids used in the paper and related industries. These properties also suggest applications in soap and detergent formulations to provide water softening, building, and nondusting characteristics.

VICTOR CHEMICAL WORKS

141 West Jackson Boulevard • Chicago 4, Illinois
A. R. Maas Chemical Co., Division • 4570 Ardine Street, South Gate, California



CLARK E. THORP (right): Down-to-earth significance, despite the rocket ships.

Safer Outlook For Ozone

Safe, concentrated liquid ozone is the latest news from the laboratories of Armour Research Foundation.

Formerly available only in inconveniently high dilution, ozone can now be handled more easily. . . .

Broadening the practical scope of this powerful, potentially important industrial oxidant.

Recent disclosure by Armour Research Foundation that concentrated liquid ozone could be handled far more safely than ever before has engendered a torrent of high-flying prose in many quarters. Rocket ships and jaunts to the moon have taken a good deal of the play. Although the glamor of the Buck Rogers approach is undeniable, the new research development has a great deal of down-to-earth industrial significance.

Commercial ozone is of modern vintage. For more than a century, the pungent, bluish gas was little more than an experimental commodity. But the last decade saw intensive development of ozone as an oxidant, and the debut of equipment to produce it on a tonnage scale. Today the process utility of ozone is firmly established and its competitive position compares favorably with many of the more conventional industrial oxidants.

The gas is made commercially by electronic irradiation of air or oxygen. Finished product is highly diluted, containing only 1 or 2% ozone by weight. Concentration can be increased by liquifaction, but the liquid ozone is highly explosive and entails grave handling risks. Dilution with liquid oxygen reduces the explosive hazard if ozone concentration can be kept below 30%. This is not as easy as it appears because liquid oxygen and ozone are not completely miscible; the ozone-rich phase in such a system is as explosive as the pure substance. Furthermore, the lower-boiling oxygen evaporates faster to increase the ozone concentration.

Cost Appeal: Although most industrial ozone used to date has been in the highly diluted gaseous form, the economic appeal of a concentrated liquid product has long been recognized. Due to the inherent instability of ozone and the large volume of diluent, it is not feasible to ship the commercial product. As things stand today, the consumer must make his own and find a use for the large volume of oxygen (after the ozone has been used)—or he is at a definite cost disadvantage. As a result of this requirement for captive ozone, and the economics associated with the installation of manufacturing facilities, applications have been limited to large plants.

The safe, concentrated liquid product will reduce process gas volume, effecting savings in type and size of equipment needed for the decreased load. Practical adaptation to small plants is a logical consequence. But more important from the long range view, the new advance—by bringing ozone within the reach of a wider range of potential users—should spark a great deal of research which, in all probability will lead to new markets.

Hydrogen peroxide and fluorine are examples of commodities which have come along the same route. Once the handling problems were overcome, industrial development went full steam ahead.

Ozone investigation at Armour Research dates back to 1941. Intimately associated with the quest for rocket fuels, progress—under the guidance of Dr. Clark E. Thorp, mentor of the Foundation's chemistry department—was of more than academic interest to the Air Force. Since the end of World War II, the work has been sponsored by Air Reduction Co., Inc.

According to Thorp, the explosive hazard is brought under control by " . . . removing certain thermal, mechanical, electrical, and chemical sensitizing influences." Neither Armour nor Air Reduction care to divulge further details.

Striking Features: But the advantages of ozone as an oxidant—and its potential markets—are no secret. Although the actual choice of an oxidizing agent for any given process function depends upon a variety of technical and cost factors, ozone possesses certain striking chemical features which could be exploited to advantage over a wide field of application.

One of the most powerful oxidants known, ozone is exceeded only by fluorine in its oxidation potential. In the presence of water, the gas reacts rapidly with all kinds of organic matter; in the anhydrous state, ozone acts slowly on saturated organic compounds, but readily attacks ethylenic and acetylenic centers to form ozonides. Ozone also can serve as a catalyst for oxidations with gaseous oxygen i.e. conversion of acetaldehyde to acetic acid), and its germicidal activity is high. General advantages of ozone use are ease of control, absence of solid oxidative residues; oxygen is the only possible ozone reaction product.

Ozone has proved itself in water

AMMONIUM ACID FLUORIDE

•

MAGNESIUM SILICO FLUORIDE

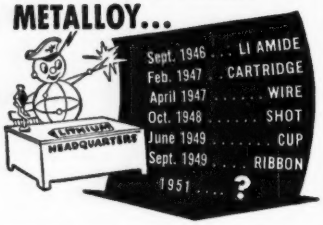
SPOT DELIVERIES

HENRY SUNDHEIMER COMPANY

103 Park Ave., New York 17
Telephone: MUrray Hill 5-4214

Fluorine Specialists for Over 40 Years

LITHIUM FORMS Pioneered by METALLOY...


LITHIUM
HEADQUARTERS
Sept. 1946 . . . LI AMIDE
Feb. 1947 . . CARTRIDGE
April 1947 . . . . . WIRE
Oct. 1948 . . . . . SHOT
June 1949 . . . . . CUP
Sept. 1949 . . . . RIBBON
1951 . . . ?

To Aid Industry, Metalloy Has Pioneered the Manufacture of Lithium in These Forms:

Lithium Metal	
Cup ..... 1/5 lb.	Shot ..... 4-8 Mesh
Extruded Rod . . . ½" & ⅝" Dia.	
Wire ⅛" Dia.	Ribbon ..... ½"
Cartridge (Encased in Copper Tubing) ..... 2.25, 4.50, 9.0 & 108.0 Gram	

Lithium Hydride	Lithium Amide
Fine Ground	Crystalline

SPECIALISTS. Metalloy has developed special forms of Lithium and Lithium Compounds for many specialized applications. Check this list of over expanding Lithium Salts, exclusive with Metalloy:

LITHIUM

Aluminate • Cobaltite • Manganite • Silicate Titanate • Zirconate • Sirconium • Silicate

AS A CONTRIBUTION TO ORGANIC RESEARCH, Metalloy's technical staff has prepared an "Annotated Bibliography on the use of Organolithium Compounds in Organic Synthesis." Annual Supplements will follow.

Let Metalloy and Lithium go to work for you today. Write Dept. A for specific data on any of the above.

IF IT'S LITHIUM — IT'S METALLOY

METALLOY CORPORATION
RAND TOWER MINNEAPOLIS, MINN.

purification, bleaching, and organic synthesis. Work is now in progress on the use of ozone to oxidize plant wastes, catalyze many reactions—both organic and inorganic—and produce commercially valuable active-oxygen chemicals, such as ozonides.

Bolstered by an abundance of cheap, raw material and a straightforward process, ozone manufacture—in the light of new safety advances—should get a big boost in the near future.

•

Supplement Service: Sterwin Chemicals, Inc., is now supplying tailored vitamin and antibiotic feed concentrates to meet specific requirements of livestock growers in different regions. Products will be distributed to feed manufacturers for incorporation into predetermined formulations.

•

Castor Oil News: National Chemical Laboratory of India has come up with new applications of castor oil gel in paints and plastics. Various gel fractions, soluble in benzene-alcohol mixtures or petroleum ether, are used in plastic compositions and as coating components (in combination with drying oils). The gel also makes a satisfactory substitute for certain varnishes and solvent lacquers.

•

New Pyridines: Reilly Tar & Chemical Corp., manufacturers of a string of aminopyridines, now brings the total up to 8 with the addition of 2 - amino - 4,6 - dimethylpyridine and 2,2′-dipyridylamine.

•

Pratt Institute Research: A novel project inaugurated by Pratt's chemical engineering alumni is designed to permit fuller utilization of the school's laboratories and equipment.

They are sending a series of monthly letters to alumni and other engineers, setting forth Pratt's facilities for research and development on a fee or contract basis.

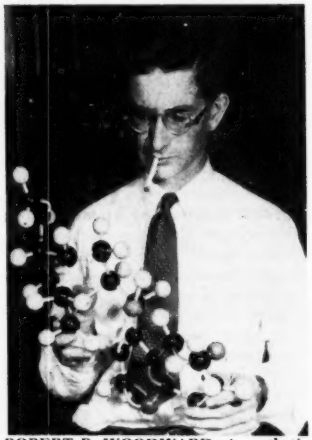
A Step Closer To Cortisone

That's the import of the first total synthesis of a true steroid. A Harvard research team, headed up by Dr. Robert B. Woodward, did the job in twenty steps starting with ortho-toluidine. Final product, a whisper away from cortisone, has raised hopes of an abundant supply of the potent hormone at greatly reduced cost.

But, everything depends upon whether or not Woodward's steroid can be converted to the desired cortisone. The prospects are good. Organic chemists today are well versed in techniques for changing one steroid to another. Present commercial synthesis depends upon the alteration of substituents on the steroid nucleus of desoxycholic acid, obtained from animal bile.

Scarcity of raw material (several hundred steers are needed to supply enough desoxycholic acid for one patient's weekly dosage) and a delicate 37-step synthesis account for the current tight cortisone situation. Under these production handicaps, even sizable expansion of manufacturing facilities will not be effective in satisfying the soaring demand.

Woodward's synthesis could be the key to the long-sought answer. A simplified 20-step procedure utilizing the abundant coal-tar base, *o*-toluidine, results in a steroid differing from cortisone only by the substitution of a hydroxymethyl for a methoxy group (on the 17-carbonyl) and the lack of a keto group (in the 11-position). Industrial *o*-toluidine sells for about 25¢ a pound.



ROBERT B. WOODWARD: A synthetic path to the steroid structure.

Successful completion of the research at Harvard University took 16 months. The work was supported by the Research Corp. and aided by raw material supplies from Monsanto Chemical Co. and Merck & Co. Although not a grain of cortisone has yet been produced by the new synthesis, opinion is almost unanimous that a cheap all-synthetic cortisone is just around the corner.

PRODCUTION...

More Pulp, Less Pollution

Production of wood pulp by solvent (triethylene glycol) extraction of the lignin complex from wood is under study by Weyerhauser Timber Co.

Early results indicate higher yield of stronger paper than by present processes; glycol recovery is the economic key.

Today Weyerhauser Timber Co. is busy studying a new wood pulping process. Triethylene glycol is used as the solvent for lignin to separate it from the cellulose.

The new process was discovered by Bror L. Grondal and Piotr Zenczak at the University of Washington, and its commercial development is being supervised by Research Corp. Major question: Can sufficient triethylene glycol be recovered after completion of the pulping operation to make the process economical?

Sporadic attempts have been made in the past to utilize organic solvents—such as chloral hydrate, monoethanolamine, various alcohols and phenols, and dioxane for wood pulping. The reasons for their failure include excessive chlorine residue in the pulp, degradation of cellulose, incomplete separation of lignin and cellulose, need for a prolonged cook.

With Sulfur: Conventional pulping processes utilize water solutions of various inorganic sulfur compounds to separate lignin from cellulose. These methods are inexpensive to operate and produce a suitable pulp. However, the dissolved organic material formed provides a perplexing waste disposal problem.

With Tri-glycol: Triethylene glycol can be used alone for the pulping operation. But presence of a small amount of mineral acid or aluminum chloride in the glycol reduces the operating temperature from about 250 C to about 125 C.

Many short-fibered woods, now unsuitable for papermaking are suitable for the new process because hydrolysis of the hemicellulose which binds the cellulose particles together—is reduced to a minimum. In the preparation of alpha cellulose for production of rayon this binder must be removed. This is accomplished by giving the wood an initial hydrolysis with a hydrochloric acid (0.5%) and then extracting the lignin complex with triethylene glycol.

As carried out in the initial experiments, wood chips were heated to 125 C. while immersed in four parts by weight of triethylene glycol containing a catalytic quantity of aluminum chloride. After the water had been driven off the wood the lignin was dissolved in less than two hours. This can be speeded up by stirring and the solvent requirements can be reduced 50% by operating under increased pressure.

ZENCZAK & GRONDAL: Paper by solvent extraction.

Solvent is recovered by draining the chips, pressing, washing with water and drying. The lignin, recovered from the glycol solution by dilution with water and filtration, forms a light yellow powder upon drying, has worth as a hard board binder.

The pulp is a light-colored product and the few tests that have been made indicate that a paper can be produced with a strength somewhat higher than kraft. The pulp yield is also expected to be somewhat higher than by the usual processes.

Coming up: The experimental data suggests that pulping with triethylene glycol has intriguing possibilities. The pulp is stronger and the yield greater; lignin has interesting properties which may permit use as a binder for hard board; stream pollution should be abated.

Now it is up to the engineer to find ways and means to recover triethylene glycol efficiently enough to make the process economic.

JAPAN WAX
CARNAUBA
and substitute waxes

CANDELILLA
PRIME, CRUDE,
and REFINED FLAKED

ORANGE - BUTTON - BLEACHED
DEWAXED
SHELLAC
Direct Importers
from our own sources

BEESWAX
AFRICAN CRUDE
South American
Bleachable

WM.
DIEHL
& COMPANY
334 W. 42nd Street
New York, N. Y.
BRyant 9-5211
Cable Address: DIEHLWILL

NP-109

• SODIUM BICHROMATE

• SODIUM CHROMATE

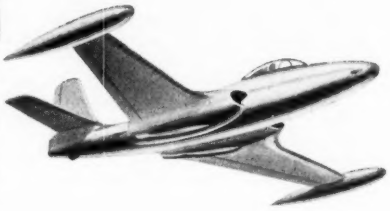
• POTASSIUM BICHROMATE

• SODIUM SULPHATE

1909

over 40 years of progress in chemicals

1951



Natural BICHROMATE OF SODA

NATURAL PRODUCTS REFINING CO. • JERSEY CITY 5, N. J.

PRODUCTION . . .

"Sodafining"

Stability of cracked gasolines upon storage, can be greatly improved by a controlled wash with caustic soda before the gasoline has been exposed to air after the cracking operation.

Developed and licensed by the Standard Oil Development Co. who have dubbed it "Sodafining," the new process arrives at a time when refiners are being forced by rising gasoline demands to turn to gasoline produced from the less desirable high-sulfur and high-boiling charging stocks.

During the cracking operation most of the sulfur is converted to mercaptans, principally aromatic. These upon exposure to air form excessive quantities of peroxides, providing an initial instability. Long-term instability results from cracking high-boiling stocks. The gasoline product from such an operation has a high concentration of reactive unsaturates, the principal gum-formers.

Both of these difficulties are greatly alleviated by a wash with 10% of 15 Bé caustic soda. This wash is followed by three washes with 20% of water. Most important: this washing must precede *any* contact with air.

•

Gaskets: Distillation Products Industries, a division of Eastman Kodak Co., is now producing a synthetic rubber gasketing material. The low vapor pressure of the synthetic rubber, from which it is made, makes it ideal for high vacuum operation. The new synthetic is quite soft and has a high abrasion resistance. Eastman states that it has a lower outgassing pressure than any other commonly available gasketing material. Pressures as low as 10^{-7} mm of mercury can be attained.

•

Corrosion Literature: McBee punch cards will be used by the National Association of Corrosion Engineers, Houston, Texas, to speed the study of literature for corrosion data. Most of the holes around the perimeter of the McBee cards has been allocated to the NACE abstract filing system. The remainder are left open for supplementary indexing by the subscribers. For 1951 the subscription rate will be $75 with mailings on a monthly schedule after August 1, 1951. It is intended to report all literature on corrosion.

•

Hand Pump: A new series of hand pumps is available from Blackmer Pump Co. for removal of liquids from drums and tanks. Several different models in capacities of 7, 10, 14 and 28 gpm are available.

•

Pressure transmitter: A new lightweight transmitter for more sensitive measurement and control of fluid flow has been developed by Minneapolis-Honeywell Regulator Co. It has a continuously adjustable range from 0-20 to 0-200 inches of water. In operation the weigh-beam system balances the differential pressure at the orifice with pneumatic pressure. This pressure then becomes a measure of fluid flow. Made of Type 316 stainless or carbon steel the unit is offered in ratings of 750 and 1500 psi.

•

Portable Air Meter: Instantaneous direct reading of air velocities of 0 to 4,000 feet per minute and static air pressures of 0 to 4 inches of water is possible on the new portable air meter developed by Hastings Instrument Co., Inc. A self-contained battery supply operates a probe-mounted noble metal thermopile used for velocity measurement while static pressure is measured by a separate attachment to the probe.

•

Blender: No charts or calculations are needed to set the new blender now being produced by Bowser, Inc. A control on each ingredient meter permits instantaneous change in the quantity being charged. Total throughput is recorded on a master counter or ticket printer. Failure of ingredient supply automatically shuts off the entire system and all meters are synchronized so that the same proportions are provided during a supply slowdown for any ingredient.

•

Liquid Level Controller: External mounting of the liquid level controller is achieved by Black, Sivalls & Bryson's new displacement-type controller. Thus the controller can be isolated and repaired without shutting down the main system. A torsion tube assembly is used to eliminate packing glands when transmitting level changes.

•

Valve Actuator: Power operation of valves of all types (globe, gate, plug, diaphragm or butterfly) is provided in a new line of valve actuators. Produced by Ledeen Mfg. Co., the actuator is a hydraulic cylinder, available in operating pressures of 19 to 79,000 psi. Use of the actuator provides safety for emergencies, for valves in remote or inaccessible spots or for valves that must be operated by power rather than by hand.

DRUGS
CHEMICALS
OILS
WAXES

COPPER SULPHATE

MONOCHLORACETIC ACID

MONOCHLORACETIC SODIUM

NAPHTHALENE

ROSENTHAL BERCOW CO., INC.
25 East 26th St., New York 10, N. Y.
CABLE ADDRESS "RODRUG"

Send For This Valuable Mailing List Data!

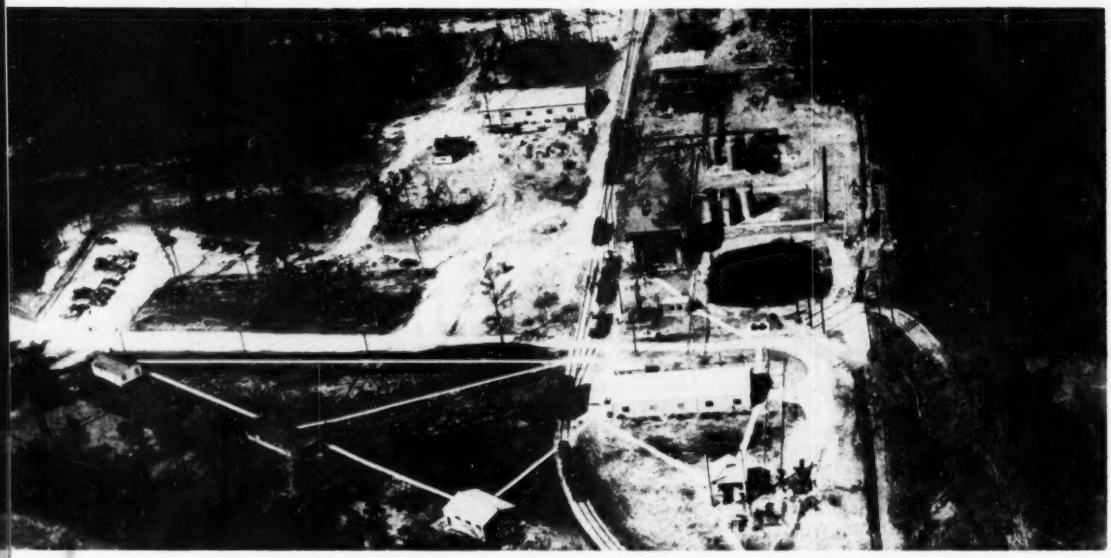
To aid you in planning your direct mail, check any of these mailing lists you may be interested in . . .

- ☐ Business Executives
- ☐ Electrical Appliance Dealers
- ☐ Manufacturing Industries
- ☐ Metal-Working Industries
- ☐ Aviation Industries
- ☐ Bus Industry
- ☐ Chemical Processing Industries
- ☐ Civil Engineering and Construction Industries
- ☐ Coal Mining Industries
- ☐ Electrical Industries
- ☐ Electronic Engineers
- ☐ Food Industries
- ☐ Metal Mining Industries
- ☐ Power Plant Engineers
- ☐ Product Design Engineers
- ☐ Textile Industries
- ☐ Welding Industry

. . . attach this 'ad' to your business letterhead . . . and mail. We'll send you complete information, selections, list counts, and prices. No obligation, of course.

Direct Mail Division

McGRAW-HILL Publishing Company
330 W. 42nd St., New York 18



1 NEW INSECTICIDE PLANT of Kolker Chemical Works looks as if it were carved out of Texas wilderness—and it was. But it is just outside of Houston, close to chemicals for DDT and BHC manufacture and close to insecticide markets of the cotton belt.

Market at Gate Beats Freight

It's a long haul from New Jersey to Texas. "Too long," Kolker Chemical Works concluded last spring. So the company decided to build a plant in Houston to manufacture basic insecticides it had been shipping from Newark, location of its main office and other plant.

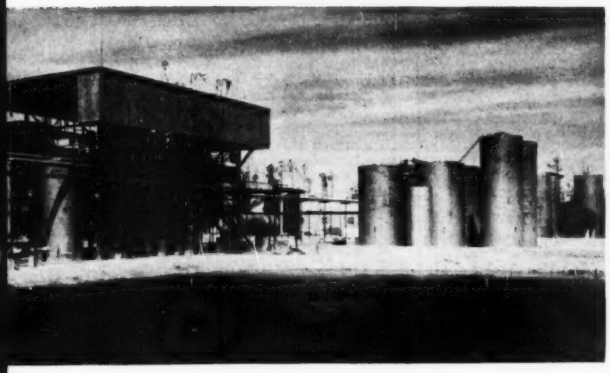
The first unit—for benzene hexachloride—went into production last fall. Last month (*CIW, April 14, 1951, p. 34*) the DDT unit was completed. This established Kolker as the only Southwestern manufacturer of both these insecticides for the popular "3-5-0"* and "3-5-40"* cotton dusts. With high cotton acreage goals and high cotton prices making this a "cotton year," the timing couldn't have been better.

Manufacture in the heart of the cotton belt should pay off in more normal years as well. At Houston, Kolker has nearby suppliers of most chemicals needed for BHC (benzol and chlorine) and DDT (acetaldehyde, chlorine, monochlorbenzol and sulfuric acid). Port of Houston facilities make export shipments easy, and many of the largest insecticide manufacturers in the Southwest are within overnight trucking distance.

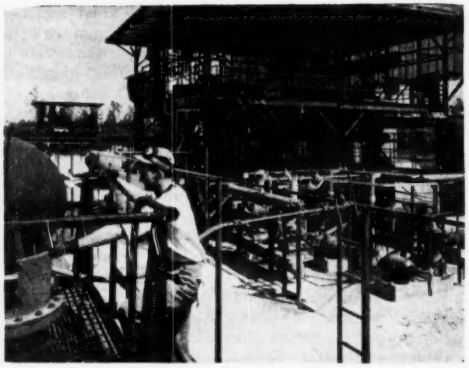
These formulators prefer a minimum inventory at the end of the season, and often get caught short by a late need for insecticides. With Kolker nearby, they can turn BHC and DDT into finished products within hours, an advantage to formulators, farmers—and Kolker.

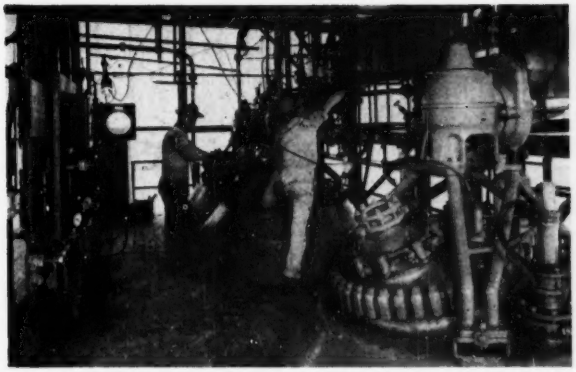
* Numbers refer to percent of gamma BHC, DDT and sulfur, respectively, in formulations.

2 BHC UNIT is of wall-less open construction popular in the Southwest. Water in the pond is used for cooling.

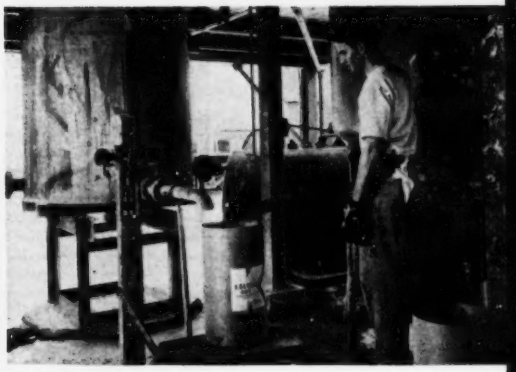


3 CHLORINE TANK CAR, just in from Diamond Alkali's Pasadena, Tex., plant, is hooked up to BHC unit line.





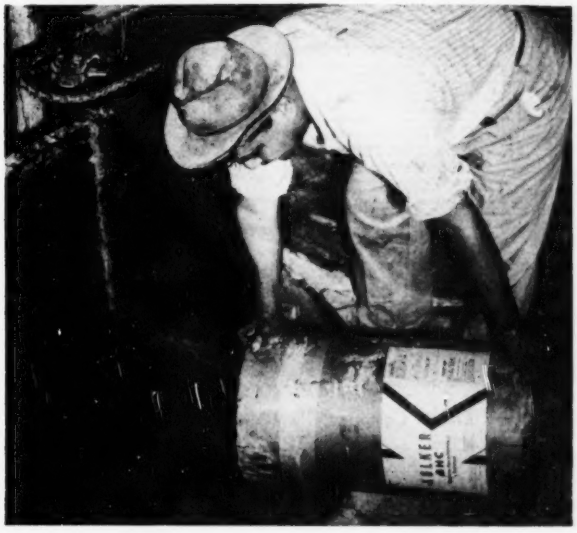
4 CHLORINATION of benzene is carried out in glass-lined Pfaudler reactors. Product after separation contains 36% gamma isomer.



5 MOLTEN BHC will solidify in drum. Formulators remelt it in making finished dusts.

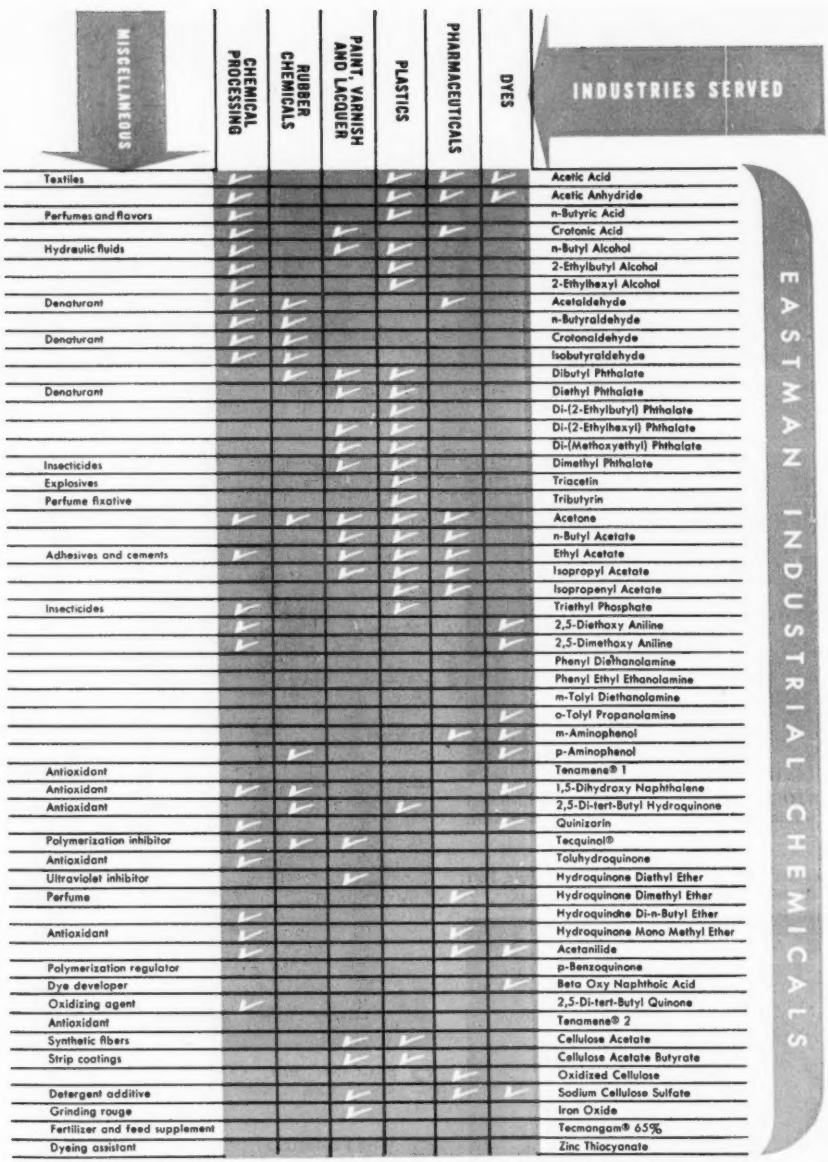
6 MANY BIG FORMULATORS, such as Port Fertilizer and Chemical Co., Los Fresnos, are within easy motor freight distance of Kolker.

7 INTO THE MIXER goes the drum of BHC shipped from Kolker. Port melts BHC with DDT in making concentrates for cotton dusts.



8 BAGGING BHC CONCENTRATE which will be used to make cotton dust.

9 NOW FINISHED INSECTICIDES, BHC and DDT leave Port plant on final trip to outlets.



Specifications, properties and other typical uses of these chemicals are contained in the 1951 Eastman Industrial Chemicals catalog. Write for your copy.

EASTMAN INDUSTRIAL CHEMICALS

TENNESSEE EASTMAN COMPANY, *Division of Eastman Kodak Company,* **KINGSPORT, TENNESSEE**

SALES REPRESENTATIVES: New York—10 E. 40th St.; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave. **West Coast: Wilson & Geo. Meyer & Co.,** San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Seattle—1020 Fourth Ave., So.

SPECIALTIES....

Open for Comment

Federal Trade Commission hearings on proposed trade practice rules for the floor wax and polish industry will open in Washington on May 11. That's also the deadline for specialties manufacturers who wish to send their views, suggestions or objections in writing to the commission. Copies of the proposed rules can be had for the asking from the FTC.

Aim in setting up fair trade practice rules for the floor polish industry is to maintain ethical business practices that will insure fair competition. FTC sees this as affording protection not only to the industry, but to the public as well.

Heart of the rules are provisions dealing with proper use of terms such as "wax," "slip-proof," "slip resistant," "waterproof," "water resistant," "spot-proof" and "heavy duty" in describing industry products. FTC says that these provisions are designed to prevent use of such terms under circumstances which are false, or misleading to the purchasing public.

Work on setting up such rules got under way several years ago after an investigation of practices prevalent in the floor wax products industry. Industry received a draft of the proposed rules for study and comment in June, 1949. The proposed rules now to be discussed represent a suggested revision and "expansion in scope" of the 1949 proposed rules.

King-Sized Aerosol

Western and mid-western housewives will have a king-sized aerosol insecticide to squirt in hard-to-reach corners this summer as Eston Chemicals begins distribution of Eston "14", a formulation of 3% DDT, pyrethrum and piperonyl butoxide packaged in a 14-oz seamless crown-type container. Eston will also manufacture a conventional 12-oz aerosol. Eston 14 will sell for about $1.89.

The company's plunge into still another handy packaged product stems from "excellent results" on its Charg-A-Can packaged refrigerant, introduced a year ago, which has found wide use by refrigeration equipment repairmen. The Charg-A-Can, which was developed in the fall of 1949 and backed by national distribution, gives the serviceman with a small repair job a convenient 1-lb can of Freon 12, Freon 14 and sulfur dioxide. Freon one-pounders sell to the industry for around 92¢.

Eston's astute president, A. M. Esberg, is already supervising additions to the company's Los Angeles plant—first since 1940—which will up capacity on consumer and defense-order products some 25%. Emphasis will be placed on defense orders, then on its insecticides and fumigants.

Eston 14, manufactured in Los Angeles for Eston, has an improved atomizer valve that will give the housewife finger-tip control over moths, flies, gnats, mosquitoes and cockroaches. While housewives may not share his enthusiasm, Esberg says he's looking forward eagerly to this summer's flies and mosquitoes. He'll have Eston's new king-sized aerosol insecticide in one hand and a sales ledger in the other.

•

Anti-Static Agent: A new liquid formulation to eliminate dust collection on polystyrene and other plastics due to static charges has been developed by Roxbury Chemical Works, Inc., Centredale, R. I. D-Stab B, as the material is called, is odorless, colorless, quick-drying, non-inflammable and contains no toxic solvents.

•

Lube Additives Plant: The $2 million chemical oil additives plant of Lubrizol Corp., now nearing completion at Houston, Tex., is scheduled to go into operation by the end of May. The products are used by refiners in manufacturing lubricating oil.

•

More Lilly Antibiotics: Eli Lilly will start immediate construction of a new antibiotics plant on recently acquired land near Lafayette, Ind. Located on a 370-acre plot on the Wabash River, it will have available abundant fresh water and raw materials for preparing media. Final specifications as to size and layout of the plant, to be called Tippecanoe Laboratories, have not been determined.

•

Silicone Polish: Another manufacturer has switched to silicones: Plastone Co., Chicago. Its product is called Opal Silicone Creme, sells for 69¢ (8-oz bottle).

The name was registered as a furniture polish tradename in 1946. Last January Plastone started overhauling the formulation to add silicones. First batches were made in February, followed by first marketing a month later. Test marketing has just started in New York and Peoria, and demonstrations in Chicago chain stores will soon be conducted. National distribution will be limited by competing silicone furniture polishes.

WATER AT 5¢ PER THOUSAND GALLONS (Treated)

GRDA

and... PLENTY OF IT!

Plus process steam at 20 cents per thousand pounds, electric power as low as 5.3 mills per kwh, and plant sites at low cost. It adds up to GRDA's non-profit "package deal" for industries with a plant location puzzle.

Find the answer in the rapidly developing Grand River Valley of Northeastern Oklahoma, the land of year-round outdoor recreation.

Write for this illustrated booklet. Requests will be kept confidential. Please write Drawer 112B

GRDA

GRAND RIVER DAM AUTHORITY

VINITA, OKLAHOMA

An Agency of the State of Oklahoma

WE HAVE—

A SMOOTH EMULSIFIER

MADE ENTIRELY FROM INGREDIENTS MEETING THE HIGHEST STANDARDS OF PURITY

CARLISLE GLYCERYL MONOSTEARATE

PROVIDES—
SMOOTH, RICH, LASTING TEXTURE

IN FOODS
ICE CREAM
MARGARINE
SHORTENING

AND COSMETICS
CREAMS
LOTIONS

- QUALITY
- UNIFORMITY
- PERFORMANCE

FOR ADDITIONAL INFORMATION—SAMPLES—WRITE

CARLISLE CHEMICAL WORKS, INC.
READING 15, OHIO

Liquids Roll On

The swing to liquid synthetic detergents is gaining momentum. Latest product is Jewel Tea Co.'s Jetco Suds, soon to be released by the Barrington, Ill. company.

It will be marketed in a 12-oz glass bottle, curved for secure holding. Retail price is 59¢. The mammoth Jewel distribution system, comprising a door-to-door home service department as well as some retail stores, will offer Jetco to housewives in 42 states during July—national distribution with a bang.

Jewel says that its product is composed of three components that exercise a synergistic action. Detergents in the blend are fatty acid amines and amides, but the company will not identify the third ingredient.

Philadelphia Doings: This eastern metropolis, home of another brand with national aspirations*, is being serviced with some private label products. One being sold under the American Stores Co. label is called Speedup. A round 8-oz. bottle sells for 29¢.

*Fels Soap Co.'s Rol.

Report from Ohio: Sinclair Manufacturing Co., Toledo, does not plan to extend the distribution area for Sprite (*CIW, March 24, 1951, p. 19*) in the immediate future. It will, however, intensify and widen distribution in states currently served (Ohio, Indiana, part of Michigan, Kentucky, Pennsylvania and New York). Sprite, incidentally, is a blend of a non-ionic detergent (Sharples Chemicals Corp.) and an alkyl aryl sulfonate (Atlantic Refining Co.).

Small manufacturers can find encouragement in Sinclair's experience of selling against the heavily-advertised Joy of Procter & Gamble. When Joy hit Toledo, it soon began to outsell Sprite, and still maintains sales leadership in that area. However, Sprite's sales have increased too, confirming the opinion held by many that sales competition from a nationally-promoted product—especially a new type—is of advantage to the smaller company pioneering in the same field.

•

Ammoniated Tooth Paste: A new ammoniated prophylactic dental paste containing dibasic ammoniated phosphate, urea carbamide, a synthetic detergent, glycerine and pumice, is being distributed by Jamco Co., New York, under its Dentammo label. The company is the distributor of Dentammo ammoniated tooth powder that has been on the market for some time.

•

Antiseptic Floor Cleaner: Piatt & Smillie Chemicals' (St. Louis) antiseptic liquid detergent that has been test-marketed in a few selected areas during the past year, is now being sold on a national scale under the company's trade name, First. It both cleans and sanitizes floors in one operation, its bactericidal properties being imparted by Santophen 1 (*ortho*-benzyl-*para*-chlorophenol).

•

Bonding Agent: A primer for use in bonding silicone rubber to metals or ceramics has been developed by General Electric. Called G-E 81267, it is a thin, light-colored liquid that is simple to use. Applied to a clean surface and allowed to air-dry for 20 minutes, it is then rinsed with water and dried. The treated surface can then be molded under pressure at 125 C against freshened silicone rubber compound.

•

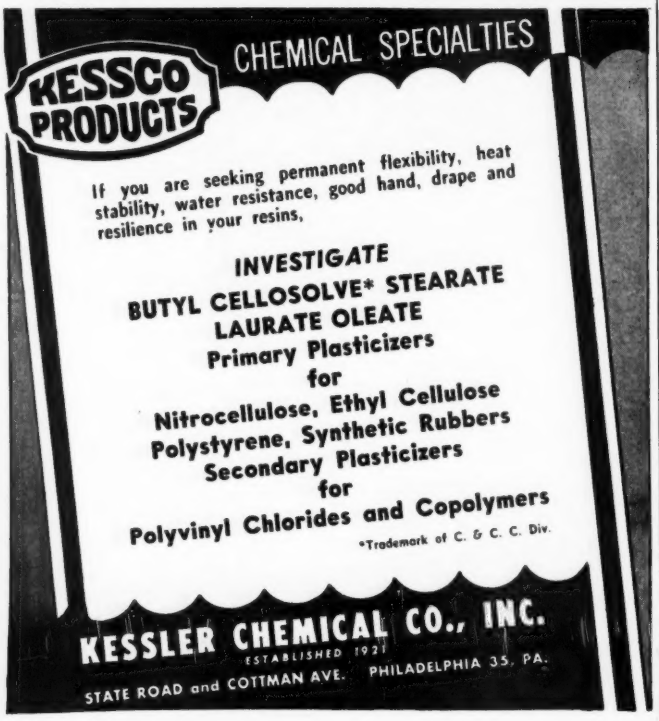
Drug Filling Lab: A $300,000 filling laboratory for injectible drug products will be built by Wyeth, Inc. in Marietta, Pa. This is part of a multi-million dollar expansion program which also includes a new penicillin plant in West Chester, Pa.

•

Detergent Expansion: Permits for buildings to be used for synthetic detergent production have been issued to National Aniline Division, Allied Chemical & Dye Corp. Its South Park Avenue, Buffalo, N. Y. property is the site. Indicated cost of one building is $30,000; the other, $80,000.

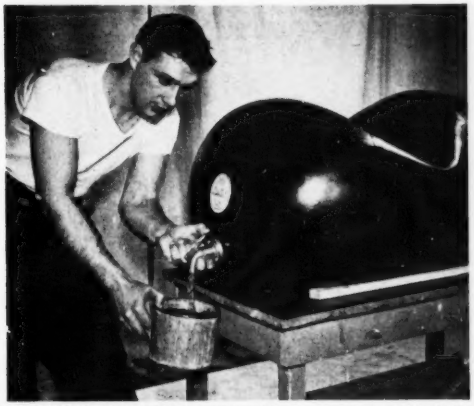
•

Textile Softener: Softex 460 is the name of a new anionic substantive textile fiber softener developed by E. F. Houghton & Co., Philadelphia. It has undergone mill tests on cotton and rayon fabrics, cotton knitting yarns and cotton hosiery. Its even distribution through a yarn package is said to make it especially well suited for package dyeing.



PICTURES IN THIS ISSUE:

Cover (bottom)—André Photographers; p. 14 DiSalle—Business Week: Dick Wolters; p. 23—James O. Sneddon.



NO VENTS NEEDED for either filling or emptying U.S. Rubber's new drums, made of Ustex, impregnated with rubber.

THREE STAGES OF DRUMS, which are suitable for shipping liquids or dry powders, are non-corrosive and non-absorbent.

HANDLING IS MADE EASIER by rounded corner design. Operator tilts 55 gal. drum, moves it without difficulty.

SUSPENDED FROM CEILING and inverted, drum can be completely drained. Metal plate can be easily adapted.

Rubber Drums: "Fold and Return"

As the climax of 3 years of research, this week, U.S. Rubber introduces its new synthetic rubber-fabric drum. Constructed of Ustex (the company's tough cotton fiber) and impregnated with synthetic rubber, the drums posses some unusual and attractive properties. They are light weight (an empty 55 gal. drum weighs approximately 30 lbs.), non-absorbent and resist corrosion and weather. But the big feature: They are collapsible.

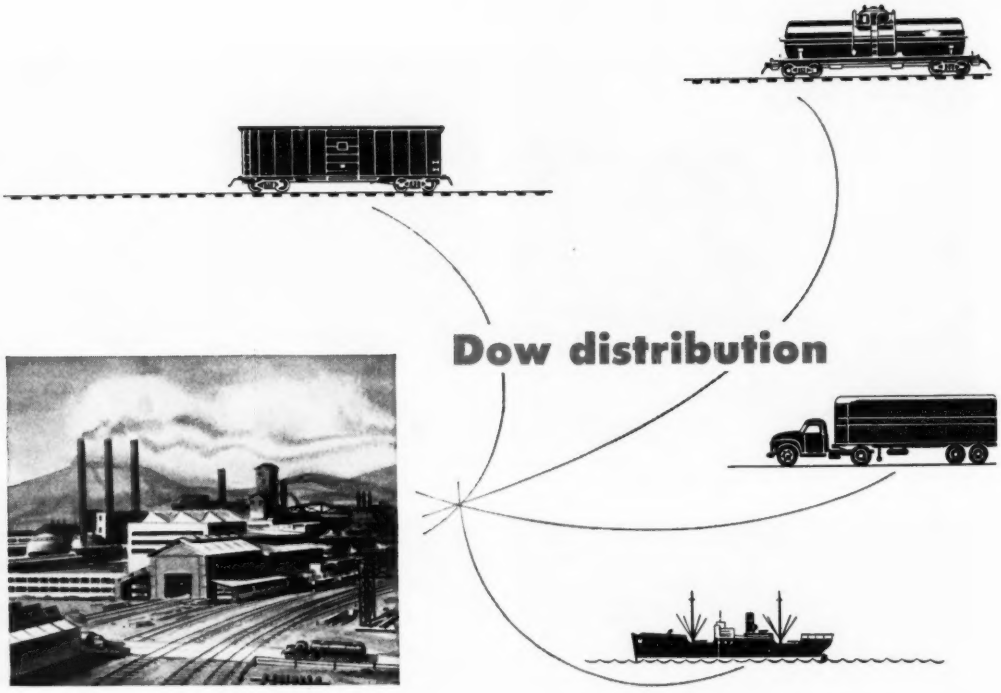
Over an 8-fold saving in space—with a corresponding saving in costs—on returns is claimed for the new drums. More than 2500 folded drums (55 gal.) can be shipped in a standard box car that would hold only 300 rigid metal ones.

A safety factor in connection with the drums is that they eliminate the need for a vent—for either filling or emptying. And the rounded corner construction presents a double advantage. It enables the container to be drained quickly and completely. It also means that operators will find the drums easier to handle.

Tests made by U.S. Rubber indicate the drums are suitable for shipping fats and oils, greases, paints, soaps, emulsions, dry powders, and a number of industrial chemicals and pharmaceuticals.

Cost and Availability: Because of the uncertainty surrounding the cost of synthetic rubber,, the company is not able to put a price tag on the new drums. It does say they will be more expensive than regular steel, but cheaper than stainless.

To a drum-hungry industry, any new type of container brings welcome relief—even if it means substituting critical rubber for tight steel. At present, a limited quantity of the drums are in production for essential petroleum and chemical uses. But the company has its sights set on non-essential users as well, and more will be available . . . particularly if the government relaxes its policy on stockpiling rubber.



keeps your production steady!

Dow caustic soda deliveries are set up with an eye on *your* production schedules.

For this reason, Dow maintains an outstanding network of distribution. Dow has caustic soda plants in Michigan, Texas and California. Besides shipping from these plants, Dow distributes Caustic Soda Solution from bulk tank terminals in Carteret, New Jersey and Charleston, South Carolina. Dow also distributes Caustic Soda Solid, Flake and Ground Flake from Chicago, Illinois, Port Newark, New Jersey and Charleston, South Carolina.

Dow's distribution facilities offer you constantly dependable deliveries to assure maintenance of *your* production schedules. Take advantage of them.

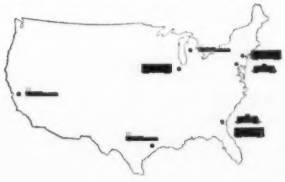
THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Atlanta • Cleveland • Detroit • Chicago • St. Louis • Houston
San Francisco • Los Angeles • Seattle

Dow Chemical of Canada, Limited, Toronto, Canada

wherever you are... you're close to

DOW CAUSTIC SODA

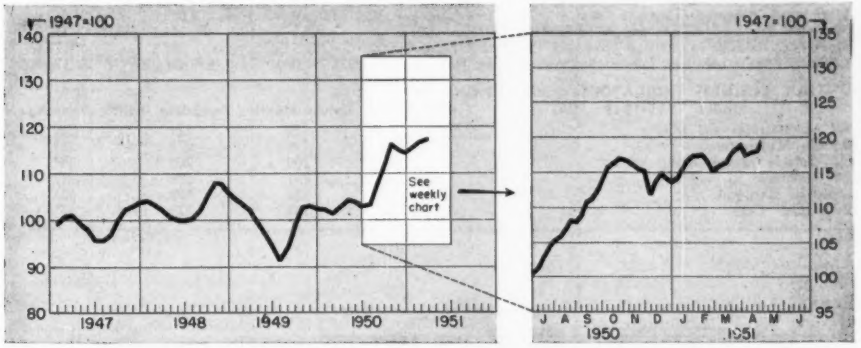


DOW

CHEMICALS

INDISPENSABLE TO INDUSTRY AND AGRICULTURE

CHEMICAL MARKETS....



CHEMICAL INDUSTRIES OUTPUT INDEX — Basis: Total Man-Hours Worked in Selected Chemical Industries

A lusty black market in chemicals for export is flourishing in the Houston area. Caustic soda is in greatest demand for Mexico and South America; there is also plenty activity in soda ash, DDT, chromates and phosphates.

Several jobbing companies are involved, marketing through agencies in other lines of business, especially food brokers. Manufacturers are making every effort to keep their products out of these channels, believe more stringent export licensing may be the answer.

In a bid to regain former markets, Chilean nitrate producers are converting to the use of solar evaporation to cut processing costs. They are counting on economies gained over the previous combustion fuel process to bolster the natural product sales position, sharpen competition with the synthetic nitrogen industry.

Further news of West German chemical industry progress is indicated by last year's chemical exports of $38.5 million, 15% of all West German foreign sales. Meanwhile, more talk is circulating about a proposed Schuman Plan prototype to nationalize the chemical industry of Western Europe, a development calling for accurate appraisal by U.S. Chemical Industry.

Hard facts support the real tightness of formaldehyde: A major producer in the process of getting a new plant under way has already sold the entire plant output for the next year.

Under the Marshall Plan, ECA countries have received a total of $264 million in chemicals and related products from the U.S. In this total were $49 million in medicinals and pharmaceuticals, $48 million in chemical fertilizers, and $37 million in industrial chemicals. Now that the plan has served its purpose, U.S. chemical producers search for more foreign outlets.

MARKET LETTER

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
Chemical Industries Output Index (1947 = 100)	120.7	119.8	104.1
Bituminous Coal Production (Daily Average, 1000 Tons)	1,761.0	1,662.0	1,898.0
Steel Ingot Production (Thousand Tons)	2,079.0	2,065.0	1,910.0
Wholesale Prices—Chemicals and Allied Products (1926 = 100)	144.0	144.5	117.0
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	233.3	235.5	177.9
Chemical Process Industries Construction Awards (Eng. News-Record)	$21,790,000	$29,302,000	$6,374,000

MONTHLY BUSINESS INDICATORS—PRODUCTION (Index 1935-1939=100)	Latest Month	Preceding Month	Year Ago
All Manufactures and Mining	222	221	187
Durable Manufacturing	276	271	211
Non-Durable Manufacturing	200	200	181
All Chemicals	291	288	247
Industrial Chemicals	523	509	426
By-product Coke	187	178	145

Although the CIW chemical output index climbed last week to a new high of 120.7, chemical wholesale price averages moved downward for the third successive week. Further evidence of a brief pause in the steady ascent can be seen in the sales drop of $47 million from the previous month's total of $1,703 million, while inventories rose 2% in that period.

It looks as if the principle of freight equalization will become law, following a three-year trial period of the works "basing point" system. Favorable action by a Senate committee is expected to bring early passage of the McCarran bill permitting equalization. To chemical manufacturers, operating on small margins, this will provide a new opportunity of getting acquainted with their competitors.

Most significant trend in U. S. foreign chemical commerce is that imports are rising, and exports remain relatively steady. Imports of industrial chemicals at $11 million (up from $1.6 million a year ago) exceeded exports of $9.3 million last month. Medicinals and pharmaceuticals continue the best revenue source, bringing in $18.7 million from overseas in the same period.

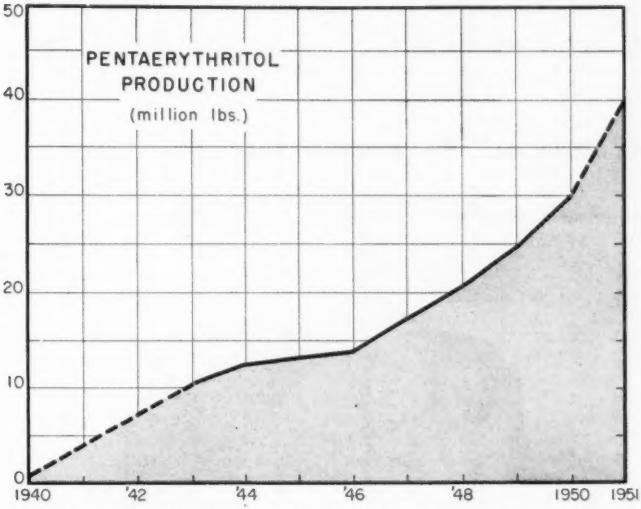
Signs of supply easing were evident in several branches of the chemical industry last week. Soda ash backlogs were gradually getting whittled; stepped-up manufacture of by-product muriatic acid improved consumer prospects; and sales of vinyl plastics slackened as inventories rose.

A lot of hustling for quebracho replacements is going on because of the recent price rise from Argentine suppliers. Among the replacements for supplementing the supplies in drilling muds are: polyphosphates, water-soluble gums, and Douglas fir bark.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending April 30, 1951

	Change	New Price		Change	New Price
UP					
Casein, imp, acid-ppt.	$ .005	$ .395	Egg Yolk, dried, dom.	$ .03	$ 1.30
DOWN					
Caprylic Acid, 90%	.01	.48	Copra, ton, cif. Pacific	5.00	230.00
Carnauba Wax, No. 1 Yellow	.01	1.27	Lemongrass Oil	.25	4.60
Citronella Oil	.30	2.70	Ouricury Wax, ref.	.05	1.02
Cocoa Butter	.02	.72	Shellac, lemon, No. 1	.01	.54
Coconut Oil, crude, tanks, Pac.	.005	.18			

All prices per lb. unless quantity is stated



PENTAERYTHRITOL OUTPUT: The rise isn't matched by consumers' hopes.

DO's Take Pentaerythritol

More pentaerythritol will go into defense needs this year. Prime outlets: surface coatings and explosives.

Further expansion is limited by formaldehyde shortage, but new production is slated to bolster raw material supply.

Full-production economy will broaden pentaerythritol uses, expanded output will keep price from climbing.

Among producers of popular alkyd resin components, few face a more precipitous path than the pentaerythritol maker to keeping customers happy. For pentaerythritol* has never yet, in its twelve-year span of industrial use, been able to satisfy the active and pending demand in the quality surface coating field.

Now that demand is rising more steeply under the stimulus of defense needs, producers will learn how to say no while keeping an eye peeled for the future.

Originally developed for surface coatings in 1939, military needs for the tetranitrate (PETN) in explosives during World War II soon surpassed this embryonic use in priority and quantity.

The post-war period looked like a good opportunity for PE to win wider consumer acceptance in competition with other polyhydroxy alcohols for alkyds, and, with equal versatility, in modified ureas and phenolics. Further intensive research and development opened new vistas in upgrading other plastics, and in combination with some up-and-coming dibasics (e.g. maleic anhydride) in making coatings superior to many produced previously.

After the boom year of 1948, the rather general inventory recession of 1949, combined with the phenomenal expansion in petrochemicals, brought the prospect of a surplus of formaldehyde, necessary ingredient for PE. During this time PE uses continued to expand, and several formaldehyde producers made ready to get into PE production to satisfy customer demands in a competitive economy for civilian goods.

But call for formaldehyde swung the pendulum in the other direction, and much of the proposed expansion was shunted aside for a more auspicious time. Since Korea, formaldehyde has become even scarcer, and capacity for PE—though substantially more each year—will be limited by the availability of its raw material.

Process Peek: The reaction between formaldehyde and acetaldehyde in alkaline solution under controlled operating conditions gives PE as the main reaction product. Close control of temperature is essential to minimize the formation of polypentaerythritols, which can only be tolerated to the extent of 10-12% for alkyd resin applications. Even under optimum conditions, the yield of PE, based on formaldehyde, is around 70%.

The crude reaction mixture is neutralized with acid, filtered, evaporated to a specific gravity of 1.27, and then chilled to crystallize the PE and its polymers. Further purification by crystallization gives a product suitable for nitration, but the technical grade is marketable for use in surface coatings.

Another factor affecting the economics of the process is the value of the co-product, sodium or calcium formate. Today, these products have a ready sale and make the process more feasible economically; but a long term appraisal might hinge on a continued market within reasonable distance of the producing plant. Further process research should improve the yield and thus boost output with little additional plant investment.

Who's In It: At the present time, five companies are responsible for all U. S. production. In addition to these private operations, two government ordnance plants at Morgantown, W. Va., and Danville, Pa., are in stand-by condition.

Heyden Chemical is the largest producer, with Hercules and Trojan Powder Co. not far behind. Commercial Solvents is engaged to a smaller extent in West Coast production, and Reichhold has recently gained a foothold by purchasing the Delaware Chemical Co.

It is significant to note that these

Pentaerythritol Producers

Company	Location	Estimated PE Production (1950) (million lbs.)
Heyden Chemical	Garfield, N.J.	10.5
Hercules Powder	Mansfield, Mass.	9.5
Trojan Powder	Allentown, Pa.	8.5
Commercial Solvents	Agnew, Calif.	1.0
Delaware Chemical	Staten Island, N.Y.	0.5
	Total	30.0

* PE for short.

The story of the Cream Cheese _____ that wouldn't spread...

A manufacturer of fine cream cheese wanted to improve his existing product. The cream cheese crumbled instead of spreading smoothly. The problem was turned over to Isco's Product Development Department which soon came up with the answer—Isco Cream Cheese Stabilizer.

Innis, Speiden meets dozens of similar problems daily in almost every conceivable industry. If your product or process involves chemicals, gums, waxes or insecticides, let us know how we can help *you*.

QUESTION: which 135 year old company can solve your problem?

Answer:

INNIS, SPEIDEN & CO.

117 LIBERTY STREET, NEW YORK 6, N. Y. • SAN FRANCISCO • LOS ANGELES

BOSTON • CINCINNATI • CHICAGO • CLEVELAND • GLOVERSVILLE • PHILADELPHIA

SUBSIDIARY • E. S. BROWNING CO., LOS ANGELES • SAN FRANCISCO

ISCO (T.M.)

producers also make formaldehyde, alkyd resins, or explosives. From the competition standpoint, it's hard to beat integration through raw materials or the finished product.

Other major formaldehyde producers follow these developments, of course, with interest that is more than casual. Increase in formaldehyde production, such as the Celanese expansion at Pampa, Texas, and in Canada, or any situation improving the availability, serves to intensify cost and market calculations.

In any event, production of PE should reach 36-40 million pounds, exclusive of military requirements, during the current year.

About the Future: Although demand for PE in explosives will not approach World War II requirements, this added burden on top of defense needs and civilian consumption will accentuate the shortage for the more dispensable users. Expansion of formaldehyde production will cushion the non-priority cutbacks, but the blow will be felt just the same.

The longer-term trend will treat customers and would-be customers more kindly, depending on the formaldehyde capacity.

If raw materials costs do not climb, expanding uses for PE should bring future prices below the quotation, 34¢ a pound in carload lots, now prevalent. As an indication of PE's popularity in the resale market, less than car-lots are snapped up even with a 65-70¢ price tag.

Several factors foretell a bigger share for PE in the surface coatings field. Resins obtained by reaction with maleic anhydride have outstanding durability, toughness and adhesion. Wide variation in properties can be obtained in combination with rosin or low-cost drying oils, and in modification of other alkyds.

Another promising extension—modification of urea and phenolic resins—will present many new industrial facets. And as these uses grow, and as process improvements effect economies, the widened horizons will keep producers in a busy state of euphoria.

GOVERNMENT NEEDS

Bids Close	Inv. No.	Quantity	Item
General Services Administration, 1114 Commerce St., Dallas, Tex.:			
May 8	FW-13789	640 gals.	paint thinner
May 8	FW-13789	35,650 lbs.	boiled linseed oil
May 8	FW-13789	6,200 gals.	steam-distilled turpentine
Raritan Arsenal, Metuchen, N.J.:			
May 8	51-458	1,687,500 lbs.	vapor cleaning compound
May 9	51-459	800,000 lbs.	alkali cleaning compound (100-lb.)
May 9	51-462	9,000 gals.	phosphoric acid
May 9	51-471	3,400,000 lbs.	alkali cleaning compound (400-lb.)
May 9	51-472	250,000 lbs.	alkali cleaning compound (25-lb.)
Commanding Officer, Watertown Arsenal, Watertown, Mass.:			
May 7	186	100 lbs.	titanium iodide
Commandant of the Marine Corps., Attn. Supply Dept., Procurement Section, Washington 25, D.C.:			
May 10	1686	150,000 lbs.	naphthalene flakes (class B Fed. Spec. R-N-91)
General Services Administration, Region 3, Washington 25, D.C.:			
May 14	99578-R-3	30,000 lbs.	sodium bicarbonate powder
May 14	99606-R-3	140,000 lbs.	soda ash (Type I, 58-PC ordinary)
May 14	99549-R-3	144,000 lbs.	laundry soap
Aviation Supply Office, 700 Robbins Ave., Philadelphia, Pa.:			
May 7	B-54049	28,000 gals.	liquid drier (Type No. 1, concentrated lead naphthenate solution, Spec. TT-D-643)
May 7	B-54049	67,800 gals.	
Navy Purchasing Office, 111 E. St., New York, N.Y.:			
May 10	8744	9,000 each	skin protective compound
May 10	8732	300 gals.	carbon removing compound

GOVERNMENT AWARDS*

Item	Supplier	Location
Aviation Supply Office, Philadelphia 11, Pa.:		
enamel, exterior glyceryl phthalate	Central Paint & Varnish Works	Brooklyn, N.Y.
	Hoboken White Lead & Color Works	Hoboken, N.J.
paint, red lead	National Lead Co.	Philadelphia, Pa.
paint and varnish remover	Beck Equipment Co.	Cleveland, O.
zinc oxide pigment	American Zinc Sales Co.	Columbus, O.
mercuric oxide pigment	Precision Chemical Corp.	San Francisco, Calif.
raw linseed oil	Archer-Daniels Midland Co.	Minneapolis, Minn.
protective coating material (plymer powder, Type I)	Thickel Corp.	Trenton, N.J.
		New York, N.Y.
engine cleaning compound	E. F. Drew & Co.	Los Angeles, Calif.
engine cleaning compound	Turco Products, Inc.	Camden, N.J.
paint stripping compound	R. M. Hollingshead Corp.	Los Angeles, Calif.
paint stripping compound	Jackson Chemical Co. of California, Inc.	Los Angeles, Calif.
paint stripping compound	Turco Products, Inc.	Wilmington, Del.
dry pigment (medium, chrome yellow)	E. I. Dupont	Newark, N.J.
primer (aircraft, zinc chromate, Type I)	Pittsburgh Plate Glass Co.	

* Security regulations prevent disclosure of quantity and dollar volume.

BOOKS

Costs, Budgeting, and Economics of Industrial Research, edited by David B. Hertz. King's Crown Press, New York, N.Y.; 261 pp., $4.50.

Reviewed in this book are the proceedings of the first annual Columbia Conference on Industrial Research, held in June, 1950 which stressed the importance of research in industry. Representing the ideas of industrial and academic authorities, the book sets forth the economics of industrial research, its practical aspects, and just how industrial research justifies itself to industry.

Medicinal Chemistry, Vol. I, edited by C. M. Suter. John Wiley & Sons, New York, N.Y.; 473 pp., $12.

In order to point out where research is particularly needed, this series of reviews, written by experts, summarize the available data on the biological properties of organic substances, already studied. Especially directed at chemists and pharmacologists concerned with the synthesis of new compounds, the book correlates the relationship between chemical structure and physiological activity in each area covered; moreover, each chapter lists references to all compounds that have been tested for a particular type of pharmacological activity.

Basic Thermodynamics, by Charles Leonard Brown. McGraw-Hill Book Co., New York, N.Y.; x+266 pp., $4.50.

As a text for a one-semester course in thermodynamics, this book sets forth the fundamental laws of thermodynamics and their applications to analyses of the performance, design, and limitations of heat engines and allied machinery.

Briefly Listed

ASTM STANDARDS ON INDUSTRIAL WATER presents the various ASTM standard and tentative methods of sampling, analysis, and testing of industrial water for those interested in the field; also included are specifications for substitute ocean water and standard definitions of terms relating to industrial water. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

INCREASING THE USE OF FEED MOLASSES, 52-page technico-economic report by Robert S. Aries and William Copulsky reviewing the economic, technological and biological factors involved in expanding the use of molasses in the preparation of animal feedstuffs and silage and the methods of its utilization. From Chemonomics, Inc., 400 Madison Ave., New York 17, N. Y., at $2 per copy.

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT: BUSINESS: "OPPORTUNITIES" :EQUIPMENT :USED OR RESALE

UNDISPLAYED —RATES— **DISPLAYED**

$1.20 a line. Minimum 3 lines. To figure advance payment count 5 average words as a line.
Employment Wanted & Individual Selling Opportunity undisplayed advertising rate is one-half of above rate, payable in advance.
Box Numbers—Care of publication count as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Equipment Wanted or For Sale Advertisements Acceptable only in Displayed Style.

Individual Spaces with border rules for prominent display of advertisements.
The advertising rate is **$8.50** per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
An advertising inch is measured ⅞" vertically on one column, 3 columns—30 inches—to a page.
New advertisements received by May 9th at the New York office, 330 W. 42nd St., N. Y. 18, will appear in the May 19th issue subject to space limitations.

HELP WANTED

Would You Like to be an Editor?

To expand its editorial services, CIW plans the addition to its New York staff of:

One assistant editor
One editorial assistant

Qualifications desired:

Assistant editor: Graduation in chemistry or chemical engineering, several years experience in industry, a knowledge of the chemical *business*, ability to write.

Editorial assistant: Graduation in or knowledge of chemistry or chemical engineering, ability to write.

If you are interested in either of these opportunities, please submit details—education, business experience, salary desired, etc. —*by mail only* to:

S. D. Kirpatrick,
Editorial Director,
Chemical Industries Week
330 W. 42nd Street, New York City

All applications will be held in complete confidence.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITION VACANT

PROTECTIVE COATING Chemist—to work exclusively in research and development of lacquers, specialty paints, corrosion-resistant finishes, in laboratory of progressive Midwest compounding company. Experience in nitrocellulose, vinyls, chlorinated rubber, ethyl cellulose, etc. required. Ability to work independently of prime importance. Reply in confidence, giving details of academic and professional experience, salary range desired, and age. P 9603, Chemical Industries.

POSITION WANTED

TECHNICAL DIRECTOR — Plastics, polymers, textiles, adhesives, coatings expert, would transfer to key position with smaller company. Ph.D., 36; broad background, leadership ability, production-sales orientation, ideas for new products. Can invest. New York, North Jersey preferred but can relocate. PW 9605, Chemical Industries.

SELLING OPPORTUNITY WANTED

EXPERIENCED SALESMAN desires connection with reputable chemical manufacturer with established clientele. Upper Michigan and Wisconsin preferred. Please state salary, commission and traveling expenses allowed. SA 9671, Chemical Industries.

CONSOLIDATED

QUICK ACTION ON USED MACHINERY FOR THE CHEMICAL & PROCESS INDUSTRIES

Including Paint, Food, Rubber, Plastics, Sugar, Drugs, Cosmetics and Allied Fields. From a single item to a complete plant. CASH FOR YOUR IDLE EQUIPMENT.

CONSOLIDATED PRODUCTS COMPANY, INC.
14-18 Park Row New York 38, N. Y.
BArclay 7-0600

SPECIAL OFFERINGS

Day S.S. 5 Gal. Jktd. Vacuum Mixer, Double Arm, Sigma Blades

Day 15 Gal. Jktd. Mixer, Double Arm, Jktd. Masticator Arms with gear reducer & 5 HP motor

Pfaudler 750 Gal. Glass Lined Kettle, Jktd. & Agtd., with 3 HP motor

Many Other Items Available
What Have You For Sale?
You Can BANK on the

EQUIPMENT CLEARING HOUSE, INC.
289-10th ST., BKLYN 15, N. Y.

LIQUIDATING EQUIPMENT
former ALCOHOL PLANT

Capacity 1200 W.G. of 190 proof alcohol per day.

DISTILLATION EQUIPMENT
COOKING EQUIPMENT
YEAST EQUIPMENT
TANKS, PUMPS, ETC.

Write for list.

PERRY EQUIPMENT CORP.
1521 W. Thompson St.
Phila. 21, Penna.

SOLVENTS RECLAIMED

- Waste Batches
- Solvent Mixtures
- By-Products Recovered

Aceto CHEMICAL COMPANY INC.
82 BEAVER ST., New York 5, N.Y.
Digby 4-9760

WANTED

GEAR UP FOR BIGGER PRODUCTION WITHOUT DELAY

GOOD USED EQUIPMENT

Ready for Immediate Shipment

It's Impossible to List in this space the 5000 Machines available from your FIRST SOURCE

Send for our Latest List

FIRST MACHINERY CORP.
157 HUDSON ST. WORTH 4-5900 NEW YORK 13, N. Y.

CASH PAID

For Capital Stock or Assets of

INDUSTRIAL ENTERPRISE

● **WANTED**

By large financially powerful diversified organization wishing to add another enterprise to present holdings.

Existing Personnel Normally Retained

Box 1210, 1474 B'way, N. Y. 18, N. Y.

WANTED
COPPER SULPHATE

The J. M. Baird Company, Inc.
147 Nassau St., N.Y. 38
WO. 4-0952

TECHNICAL EXECUTIVE

Chemical engineer, experienced in production, research consulting and personnel management. Desires managerial post in company training programs, supervisory or advisory capacity in production or development in a chemical industry. PW 9589 Chemical Industries Week, 330 W. 42nd St., New York 18, N. Y.

2500 GALLONS
PLIOLITE LATEX 150

85% Styrene 15% Butadiene Copolymer
37% Solids

SOUTHERN CHEMICALS, INC.
204 N. Elm Ave., Sanford, Fla.

PROFESSIONAL SERVICES

EVANS
RESEARCH AND DEVELOPMENT CORP.
Chemical Research ▶ Processes ▶ Products Development Problems
Complete Laboratory ▶ Pilot Plant ▶ Mechanical and Optical Sections
Ask for NEW Scope Sheet C listing over 100 of our activities.
250 East 43rd Street, New York 17, N. Y.

READER SERVICE . . . . .

HOW TO USE COUPON

Mail the coupon at the bottom of page. Circle page numbers of items about which you want more details. Then write your name and address and mail it to us. Your request will be forwarded to companies concerned, the answer coming direct to you.

MAKES IT HANDY

Products and literature in this issue are listed on these pages. There are three indexes. (1) Editorial items on new products, new equipment, new literature; (2) products advertised. (3) The index of advertisers is on the following page.

THE NUMBERS

Advertisements:—There is a page number on the coupon for each advertisement. Before the number, may appear, L, R. T. B (left, right, top, bottom), locating the ad on the page; small letters following (a,b,c) indicate additional products in the advertisement.

Editorial Items:—Numerals are page numbers; the ABC's distinguish among items where more than one is on a page. There is a number on the coupon for each item referring to new products, equipment, and literature.

EDITORIAL ITEMS

For more data, circle number on coupon.

NEW EQUIPMENT

Bender 25F
Gaskets 25B
Gasoline Refining 25A
Hand Pump 25C
Liquid Level Controller 25G
Portable Air Meter 25E
Pressure Transmitter 25D
Valve Actuator 25H

TECHNICAL LITERATURE

CHEMICALS

Caseins and Caseinates 40A
Furan Base Coating 40B
Glyceric Acid 40D
Organics in Water Treatment 40E
Staple Fiber 40C

EQUIPMENT

Electric Heating Elements 40F
Electrical Resistance Testers 40G

PRODUCTS ADVERTISED

For more data, circle number on coupon

Expansion Joints 40L
Floating Roof Tanks 40K
Floor Covering 40O
Laboratory Equipment 40J
Plastic Pipe, Fittings, etc. 40I
Rotary Work Feed Table 40M
Steam-Water Diffuser 40P
Thermo-Regulators and Thermostats 40H
Valves 40N

NEW PRODUCTS

Anodes, graphite ground 9
Chemical processes, sulfuric acid from pyrites, bulletin S-102 6
Chemicals
- Ammonium acid, fluoride T22a
- Aromatic 2
- Butyl cellosolve stearate 30a
- Caustic soda, distribution 32
- Copper sulphate T25a
- Di-tertiary-butyl peroxide I
- Ethyl butyl ketone 42
- Glycerine 5
- Glyceryl monostearate B29
- Heavy 4
- Industrial, catalog 28
- Laurate oleate 30b
- Lithium compounds B22
- Magnesium silico fluoride T22b
- Monochloracetic acid T25b
- Monochloracetic sodium T25c
- Napthalene T25d
- Potassium bichromate 24c
- Shellac, dewaxed 23a
- Sodium bichromate 24a
- Sodium chromate 24b
- Sodium sulphate 24d
- Stabilizer for cream cheese 36
- Sulphur dioxide 18
- Victamide 20

Closures, drum 17
Containers
- Cans, screw-top for liquids 10
- Shipping sacks, multi-wall made-to-order 41

Filters, panel 3b
Filters, precoat 3a
Shakers, sieve, testing 1
Water supply for Oklahoma plant location T29
Waxes
- Aquawax 19d
- Beeswax 23d
- Candelilla 23c
- CWB 19b
- Japan wax carnauba 23b
- Karagami 19g
- Microcrystalline 19h
- Parwax 19c
- PWB 19f
- 159 ..... 19a
- 190 ..... 19e

Professional Service 38

■

SEARCHLIGHT SECTION

(Classified Advertising)

EQUIPMENT
(Used or Surplus New)
For Sale 38

WANTED
Equipment 38

ADVERTISERS INDEX

Aceto Chemical Co., Inc. 38
Baird Co. Inc., J. M. 38
Consolidated Products Co., Inc. 38
Equipment Clearing House, Inc. 38
First Machinery Corp. 38
Perry Equipment Corp. 38
Southern Chemicals Co. 38

READER SERVICE COUPON

Mail to Chemical Industries Week, 330 W. 42nd St., N. Y. 18, N. Y.

NAME _____

POSITION _____

COMPANY _____

ADDRESS _____

CITY & STATE _____

Editorial Items

25A	25D	25G	40C	40F	40I	40L	40O
25B	25E	40A	40D	40G	40J	40M	40P
25C	25F	40B	40E	40H	40K	40N	

Advertisements

I	3b	9	19a	19e	20	23a	24a	T25a	28	30b
1	4	10	19b	19f	T22a	23b	24b	T25b	T29	32
2	5	17	19c	19g	T22b	23c	24c	T25c	B29	36
3a	6	18	19d	19h	B22	23d	24d	T25d	30a	41
										42

Expires August 5, 1951

BOOKLETS

Chemicals

Caseins and Caseinates

Chart listing the properties and characteristics of 18 Protovac caseins and caseinates (solubilized caseins) used in those industries requiring water resistant binders, coatings or emulsifiers such as the wallpaper coatings, sizings, leather finishes, printing inks, pharmaceutical preparations fields. The Borden Co.

Furan Base Coating

Test data sheets presenting a summary of 159 tests on "B" resin, a prepolymerized furan coating; both field and laboratory test data are given in chart form. Carboline Co.

Staple Fiber

8-p. pamphlet on "Dynel," a new, man-made staple fiber, outlining its physical and chemical properties and discussing these properties in terms of their value in fabrics; information on price, standard sizes and lengths of dynel staple is also included. Carbide and Carbon Chemicals Co., Union Carbide and Carbon Corp.

Glyceric Acid

Bulletin detailing uses, properties and price of glyceric acid. Jasonols Chemical Corp.

Organics in Water Treatment

4-p. pamphlet covering the theoretical and practical considerations involved in the use of organic materials for altering the nature of sludge in order to make it non-adherent. Power Chemicals Div., E. F. Drew & Co., Inc.

Equipment

Electric Heating Elements

24-p. bulletin supplying construction, application and descriptive data on the firm's line of strip, immersion, cartridge, vane, space and other heaters, melting pots, thermostats and switches; included are tables of specific heats and conversions, and a treatise on heating formulas. Trent, Inc.

Electrical Resistance Testers

8-p. bulletin discussing the midget insulation tester, with hand generator, the constant voltage type insulation tester, available with or without ohm scale and the midget circuit testing ohmmeter, which measures resistance from .01 ohm up to 200,000 ohms. James G. Biddle Co.

Thermo-Regulators and Thermostats

12-p. catalog covering line of thermo-regulators and thermostats which may be selected according to accuracy requirements from plus or minus 0.0005 F. to plus or minus 0.10 F., intended as an aid to engineers and technicians in selecting the most suitable equipment for temperature control work. H-B Instrument Co.

Plastic Pipe, Fittings, etc.

16-p. bulletin furnishing engineering data on chemical-resistant plastic tube, pipe, valves and fittings made from "Ace-Saran," a thermoplastic material and "Ace-Parian," a polyethylene plastic; included are tables of properties, typical applications and chemical resistance ratings in addition to information on the fabrication of complete systems from these new plastics. American Hard Rubber Co.

Laboratory Equipment

28-p. publication entitled, "What's New for the Laboratory" in its twelfth edition supplements company catalogs by covering over 30 different items for the laboratory—such as, new-type laboratory clamps, miniature type pumps, a handled beaker, a pocket-type thermometer, high-capacity glass condensers, etc. Scientific Glass Apparatus Co., Inc.

Floating Roof Tanks

8-p. bulletin illustrating and explaining three types of floating roof tanks for product conservation by means of reducing evaporation losses by conserving vapors from volatile products, minimizing fire hazards, and decreasing corrosion —all of which are of particular importance in the petroleum industry. Hammond Iron works.

Expansion Joints

4-p. bulletin giving sizes, dimensions, suggested applications and other technical data on a variety of joints from small flexible connectors for use on diesel exhaust lines to self-equalizing joints for use in such applications as wind tunnels, etc. Zallea Bros.

Rotary Work Feed Table

12-p. pamphlet discusses and illustrates "controlled-air-power" device for fast feeding of work pieces to machine tools, contains installation photographs, dimensional drawings, and specification data and explains how feed table can be combined with other "packaged" pneumatic devices. The Bellows Co.

Valves

8-p. price list containing information on sizes, materials of construction and prices of the firm's line of valves covering bronze valves and cocks, iron and brass unions, expansion and swing joints. Jarecki Valve Div., H. K. Porter Co., Inc.

Floor Covering

Bulletin discussing flooring material intended for patching or completely resurfacing floors so as to make them resistant to industrial and food processing oils, acids, greases, etc. Stonhard Co.

Steam-Water Diffuser

Catalog sheet illustrating and describing all-bronze diffuser, for the quiet mixing of steam and water to produce hot water. O'Brien Steam Specialty Co., Inc.

ADVERTISER'S INDEX

American Can Co. 10
American Flange & Manufacturing Co., Inc. 17
Carbide & Carbon Chemicals Co., A Division of Union Carbide & Carbon Corp. ..... Back Cover
Carlisle Chemical Works B29
Chemical Construction Corp. 6
Concord Chemical Co. 19
Diehl & Co., William 23
Dodge & Olcott, Inc. 2
Dow Chemical Co., The 32
Glycerine Producers Association 5
Grand River Dam Authority T29
Innis Speiden & Co. 36
Kessler Chemical Co., Inc. 30
Kraft Bag Corp. ..... 3rd Cover
Metalloy Corp. B22
National Carbon Co., A Division of Union Carbide & Carbon Corp. 9
Natural Products Refining Co. 24
Newark Wire Cloth Co. 1
Oliver United Filters, Inc. 3
Rosenthal Bercow Co., Inc. T25
Shell Chemical Corp. ..... 2nd Cover
Sundheimer Co., Henry T22
Tennessee Corp. 18
Tennessee Eastman Co., A Division of Eastman Kodak Co. 28
Titlestad Corp., Nicolay 4
Union Carbide & Carbon Corp., Carbide & Carbon Chemicals Co. ..... Back Cover
Victor Chemical Works 20

BUSINESS STAFF

SALES MANAGER .... Bayard E. Sawyer

BUSINESS MANAGER .... Albert E. Weis

Atlanta ..... Ralph C. Maultsby, 1311 Rhodes-Haverty Bldg., Atlanta 3, Ga.

Chicago ..... Alfred D. Becker, Jr., Frank C. Mahnke, Jr., 520 N. Michigan Ave., Chicago 11, Ill.

Cleveland ..... Vaughan K. Dissette, 1510 Hanna Bldg., Cleveland 15, Ohio

Dallas ..... Jos. H. Allen, First Natl. Bank Bldg., Dallas 1, Texas

Los Angeles ..... Carl W. Dysinger, H. L. Keeler, 1111 Wilshire Blvd., Los Angeles 17, Cal.

New York ..... Knox Armstrong, Robert S. Muller, Charles L. Todaro, 330 West 42 St., New York 18, N. Y.

Philadelphia .....William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts., Philadelphia 3, Pa.

San Francisco ..... Ralph E. Dorland, John W. Otterson, 68 Post St., San Francisco 4, Calif.

Boston....1427 Statler Bldg., Boston 16

Detroit 2980 Penobscot Bldg., Detroit 26

Pittsburgh ..738 Oliver Bldg., Pittsburgh 22

St. Louis .. 3615 Olive St., Continental Bldg., St. Louis 8

INDEPENDENCE makes KRAFT BAGS DEPENDABLE

Sewn Valve

Pasted Valve

Sewn Open Mouth

Flat Sewn Open Mouth

Flat Sewn Valve

Pasted Open Mouth

KRAFT BAG CORPORATION
GILMAN PAPER COMPANY SUBSIDIARY
630 Fifth Avenue, New York 20, N.Y.
Daily News Bldg., Chicago 6, Ill.
made-to-order heavy-duty multi-wall shipping sacks
2 to 6 ply... printed or plain
KRAFT BAG CORPORATION

Plants at St. Marys, Georgia and Gilman, Vermont

Our total independence from outside sources for pulp and paper and other bag components ensures for KRAFT BAG users the consistent high quality and year-in-year-out dependability they require.

Wholly-owned integrated plants make the kraft paper, the crepe kraft, the kraft tape, the crepe sleeves and L.C. sleeves . . . prepare adhesives . . . make printing plates . . . print on our own modern presses.

Every step of manufacture is marked by quality-control methods to keep the quality up — come what may!

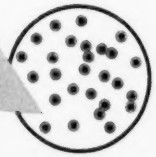
That is why YOU can depend on KRAFT BAGS!

Gilman PAPER CO.
• St. Marys Kraft Corp.
• Garwood Tape Div.
• The Gilbound Corp.
• Kraft Bag Corp.

Send your product to market in a "KRAFT BAG" — the container for a 1000 uses!

formulate with –

Ethyl Butyl Ketone



A SOLVENT — Effective solvent for VINYLITE resin VYHH. Particularly useful in nitrocellulose lacquers and synthetic coatings requiring a medium-to-high-boiling ketone. Ethyl Butyl Ketone gives you these specific advantages:

- Good solvent power plus medium evaporation rate —gives coating solutions good flow-out without unduly long drying times.
- Less action in lifting undercoats.

A DISPERSANT — Produces low-viscosity, high-solids organosols and facilitates fusion of films.

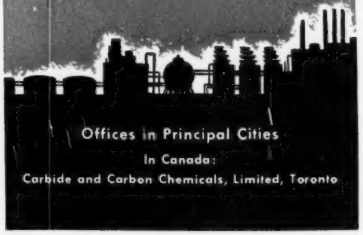
PHYSICAL PROPERTIES

Formula	$C_4H_9COC_2H_5$
Boiling Point at 760 mm. Hg, °C.	147.8
Toluol Dilution Ratio at 20°C. (½ sec. R.S. Nitrocellulose)	2.6
Evaporation Rate (Butyl Acetate = 100)	40

For more information regarding the use of Ethyl Butyl Ketone in coatings, write our nearest office for the technical information sheet "Ethyl Butyl Ketone" (F-6918). You will also be interested in a new convenient, letter size Solvent Selector Chart (F-7465). This gives a handy reference comparing the properties of Ethyl Butyl Ketone with many other solvents. Be sure to ask for one.

"Vinylite" is a registered trade-mark of Union Carbide and Carbon Corporation.

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.



Offices in Principal Cities
In Canada:
Carbide and Carbon Chemicals, Limited, Toronto